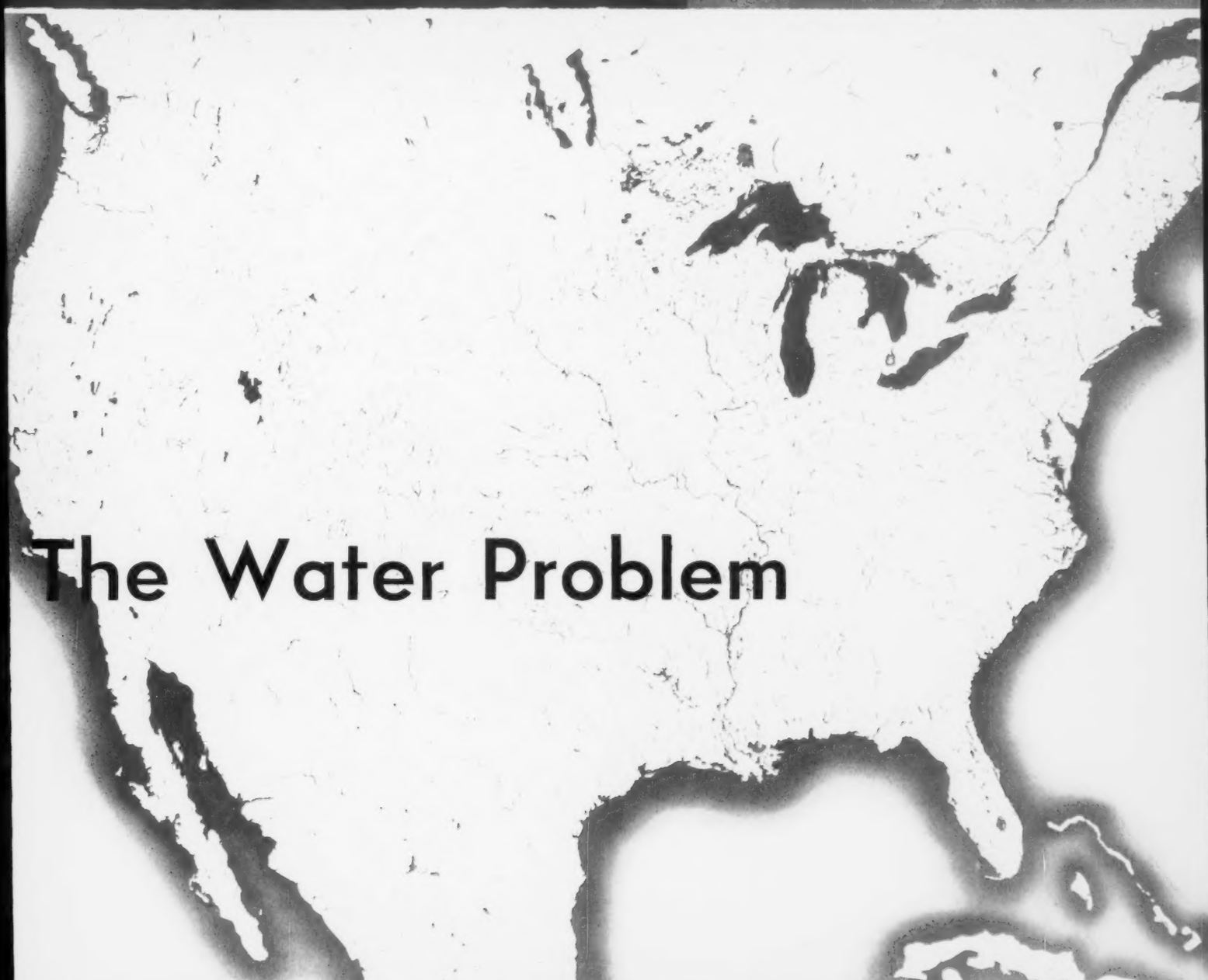
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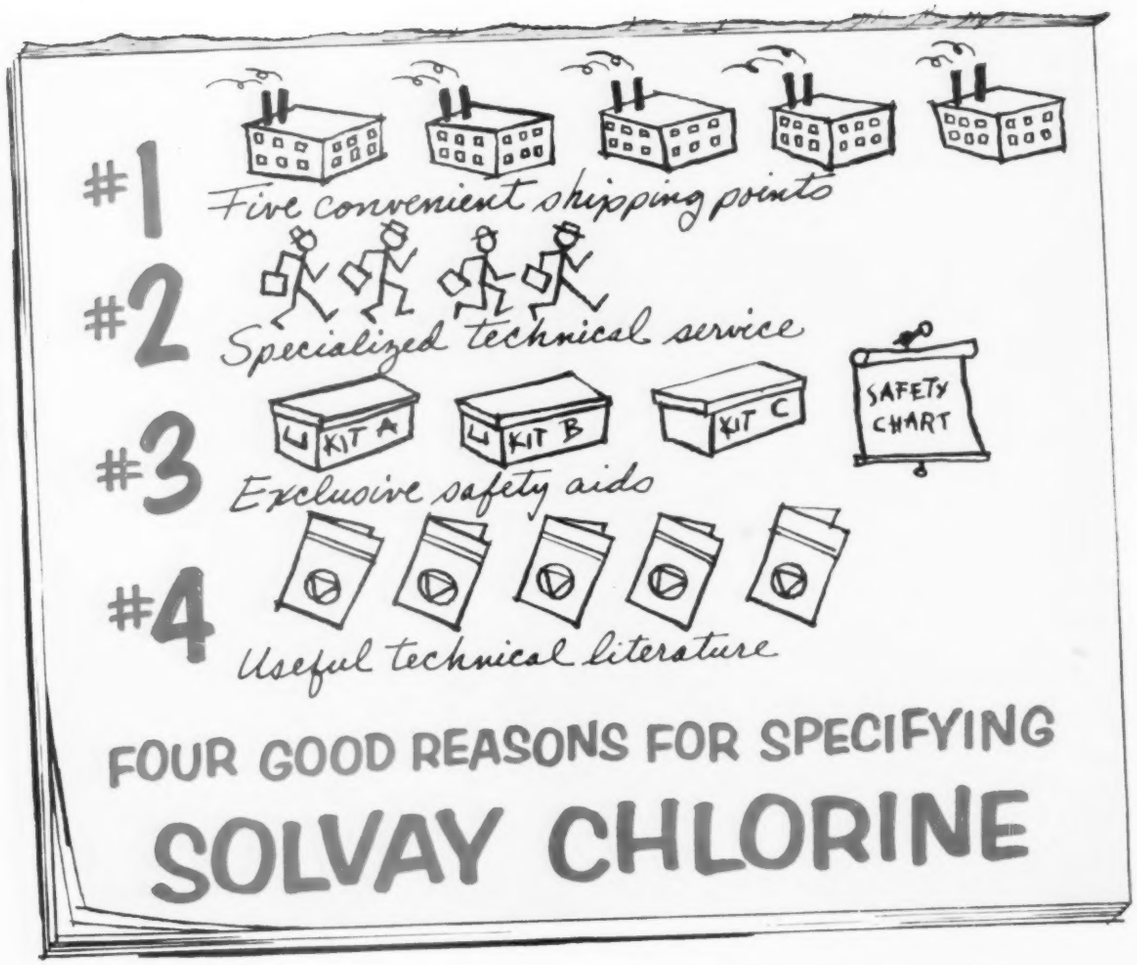
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The Water Problem

"...this industry is too silent and too defensive"

see story on page 58



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PULP & PAPER

Reader's Guided Tour

VOLUME 32
NUMBER 4

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A Guide for Technicians and Researchers 55

And a timely warning to the industry. TAPPI Gold Medal winner Swanson cautions this industry could be at a crucial turning point in competition with others, and points out how cooperative research is needed, and where it is good and when it is evil.

Water—this Industry's Grave Responsibilities 58

An unusual discussion of an old question by John G. Strange. Who gets the water and how will it be used? This industry is too silent and too defensive, he says. On its watersheds it produces seven times what it uses.

Should Prices Be Cut? The Vote is "No" 62

A Paper Week speaker stirs up a hornet's nest. David L. Luke says they won't be cut and may go up. Another speaker reveals four ways to increase profits. Other speakers' ideas presented in capsule form.

Some Do's and Don'ts in Materials Handling 68

An unusual gathering of top experts in this field give ideas on the most efficient and successful ways to move materials and products at a Georgia Tech-sponsored meeting held in Atlanta.

Rolland's "Dream" Paper Machine 70

Here's a guided tour through the new paper mill of Rolland Paper Co. Ltd. at St. Jerome, Que., with special emphasis on its outstanding features and why Rolland selected them.

ABOUT OUR COVER

All the rivers of the U.S., which are the lifelines of our economy, are shown on map prepared by the National Council for Stream Improvement for its Annual Report. Excerpts from this report are on page 61.



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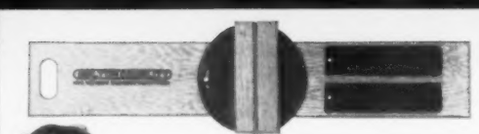
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The Editor Reads His Mail



Address letters to The Editor, PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

Payroll Perfume on the Pacific

Portland, Ore.

Editor: That faintly pungent aroma in the Toledo (Ore.) air these days is the perfume from a million dollar payroll.

Old-time paper mill communities claimed that the fumes from a sulfite mill contained the same medicinal properties as the dose of sulfur and molasses Grandma used to dole out in the springtime. We haven't any really authoritative data concerning the hygienic properties of sulfate perfume—except that oysters thrive on it in Chesapeake Bay, and there have been some record salmon catches in the effluent areas of the Northwest: But there can be no question of its benefits in the field of psychophysical therapy. The "recovery fumes" of a kraft mill are well named!

We all know that money can't buy happiness . . . but a steady job doesn't leave much time for getting into trouble. It's only when you *can't* smell the mill that a paper town is unhappy.

Seriously, we are glad to report that our rather sizable expenditure for the purpose of minimizing both stream and air pollution is paying off. The economic fragrance of Toledo today is less noticeable than was the smoke from the old waste burners. On a clear day you have to practically enter the mill to be sure that it is operating . . . which is as it should be, both from the standpoint of chemical recovery in the mill, and civic pride in the community.

So we have no apologies: We're mighty proud of that faint, but exhilarating new tang in the air!

H. S. DANIELS
President
Georgia-Pacific Paper Co.

When Bird Becomes Biron

—New York

Editor: Your story on the "out-of-this-world" book paper machine at the Consolidated Water Power & Paper Co. mill in Biron says the machine is preceded by five Biron screens. Don't you mean Bird screens?

H. A. SCOTT

Eds. note—Only horrible handwriting could make Bird look like Biron. These are the errors that turn editor's hairs gray. Mr. Scott is right.

Invitation to Frankfurt

—Frankfurt, West Germany

Editor: We beg to enclose a program of the European Congress of Chemical Engineering and of the ACHEMA 1958, 12th Chemical Engineering Exhibition and Congress, to be held in Frankfurt from May 31 to June 8. As we believe the varied program of the European Congress of Chemical Engineering and of the ACHEMA Congress will be of interest to your readers, we should be very pleased if you would refer to these events in your esteemed journal.

ACHEMA 1958 will deal with the theme "Nuclear Science and Technology" in a special group of exhibits.

No less than 14 halls with a floor space of 700,000 sq. ft. as well as 50,600 sq. ft. in the grounds, will be required for exhibiting the many thousands of apparatus and instruments, machines and structural materials, new products and auxiliaries for chemical science and technology. More than 6,000 manufacturers, engineers, physicists, and chemists will take part in this friendly gathering of creative forces who are representatives of 950 firms in 15 European and overseas countries and will demonstrate the products they have made to the 6,000-8,000 visiting members of the Congress. About 4,000 visiting members of the Congress from 50 countries had already registered. Programs of the ACHEMA Congress and of the European Congress of Chemical Engineering may be obtained free of charge from the DECHMA, Frankfurt (Main) 7, Postfach.

DR. BRETSCNEIDER,
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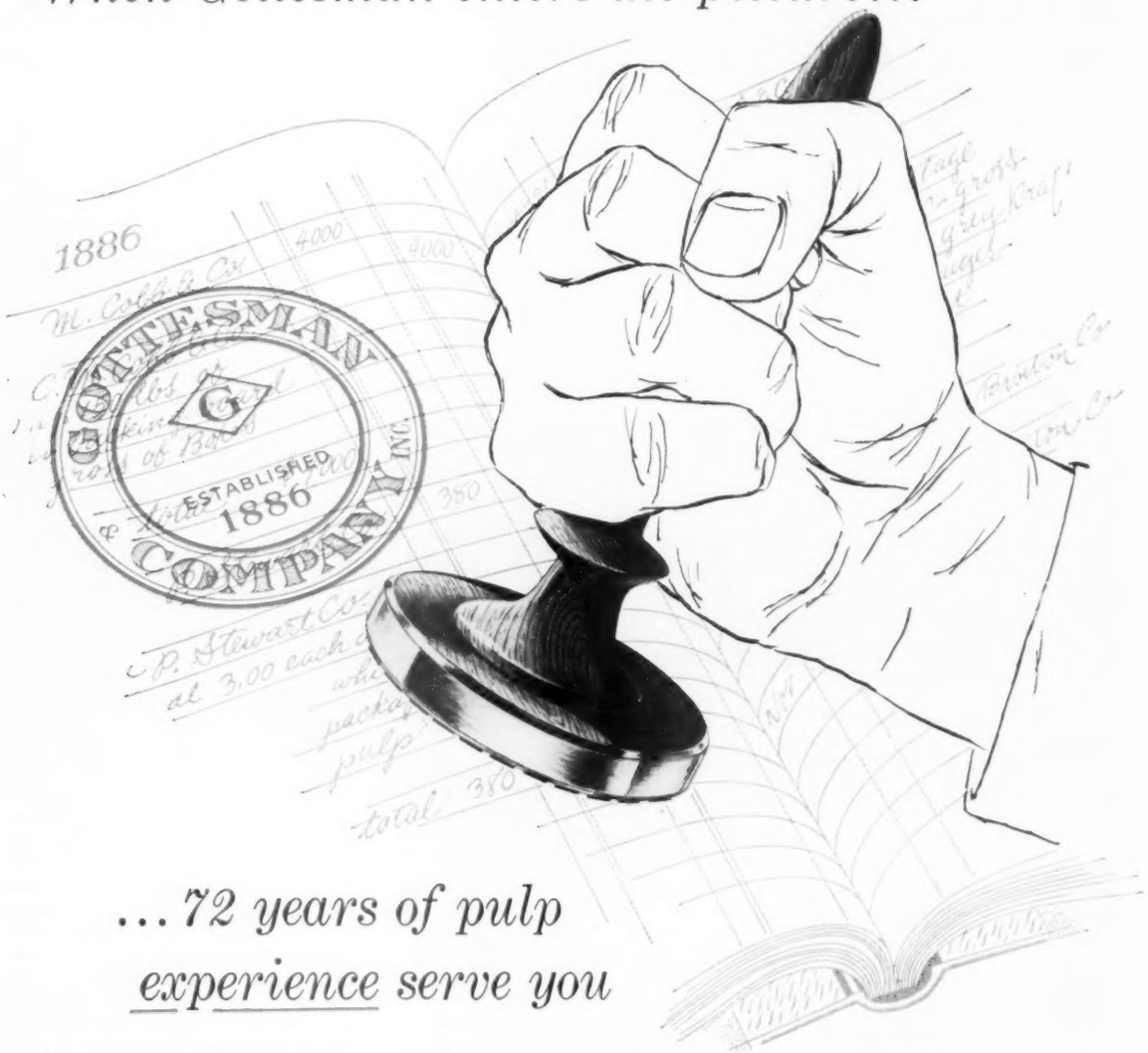
Likes St. Regis "Jax" Pictures

—New Orleans

Editor: Those pictures taken by your Southern editor, Mr. William F. Diehl, Jr., at the St. Regis Jacksonville mill (March issue) are some of the finest industrial magazine pictures I have ever seen. I get ideas from studying the pictures as well as the story.

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General Outlook

NEW PRODUCTS TO BOOST SALES. . . . In 1960, pulp, paper and paperboard sales will be about 9% in new products, according to a McGraw-Hill Dept. of Economics survey. This percentage will be substantially higher than oil, iron and steel, rubber and food products, and be only one point behind autos and trucks, and about three behind textiles. Transportation equipment is expected to lead, one-third being new. Electrical, chemical and other metalworking products are rated from 18% to 14%.

MILLIONS WILL BE SPENT. . . . A survey by Miller Freeman Publications still being carried out indicates that a vast sum of money — perhaps as much as $500,000,000 — will be spent by American producers of forest products on capital expenditures in 1958. A major portion will be in pulp and paper. An example — one British Columbia producer plans to spend $1,000,000 on new equipment.

BUSINESS EXPECTATIONS. . . . Dun & Bradstreet, Inc., in its latest compilation of businessmen's opinions says the majority expected business in their own companies in the second quarter of 1958 to equal or exceed that of the like period last year.

CONTINUOUS PULPING HERE TO STAY. . . . That's the gist of a report from a TAPPI session on continuous pulping during Paper Week. One process was revealed for instantaneous cooking (15 to 90 seconds) at high pressure (1,000 psi) at temperatures in the range of 536°F. Resultant pulp is in the yield range of unbleached kraft pulp, about 50%, and is easily bleached.

PER CAPITA PAPER CONSUMPTION WILL RISE TO 500 lbs., guestimates Wendell Moyer, research director for Crown Zellerbach. The rise won't be as sensational as it has been, will be gradual. The date? It's anybody's guess, he says.

PREPACKAGING ASSN. MEETS. . . . Looking for a bright future, this group of companies who manufacture pulp and paperboard trays and boards for fresh meat and produce display at the retail level, met in New York. It is a fast-growing industry. Its products are used extensively by the supermarkets and its rapid growth has paralleled the 2,000 new supermarkets in 1956 and a like number in 1957.

LEADERS LOOK FOR IMPROVEMENT. . . . Pulp and paper leaders meeting in New York for Paper Week were generally cheerful and expecting slow but steady improvement. Retiring APPA President David L. Luke said prices will hold or rise in this industry and predicted an end to the "cost-price squeeze." Over 1,600 salesmen almost unanimously voted by raise of hands that they expect an upturn by the end of 1958. For more details see PULP & PAPER's Paper Week reports in this issue.

New Mills and Mill Plans

MARKET PULP MILL IN OPERATION. . . . All units of British Columbia Forest Products' new bleached kraft pulp mill have been checked out and the mill is now making fully bleached pulp of high quality on a three shift basis. First shipments were made in February. In a forthcoming edition PULP & PAPER plans a special on-the-spot story of this mill prepared by its West Coast editor.

Please turn page for more



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PULP & PAPER Monthly Report

. . . of significant news and views

PROGRESS ON NEW MILL AT ST. FRANCISVILLE. . . . Battling with mud and elements, footings have been laid and concrete forms are going up for the St. Francisville (La.) Paper Co. mill being built by Time Inc. and Crown Zellerbach to make machine-coated paper. Ray W. Walker, from CZ's West Linn, Ore., mill, has joined the staff as office mgr.; Richard W. Loyse, from CZ Lebanon, Ore., has taken over as purchasing agent. Ed Nunn, from West Linn and Carthage, N.Y., is resident mgr.; Lee Maybach, from Antioch, Calif. and Camas, Wash., is construction engineer.

MILL SITE OPTION TAKEN IN SOUTH. . . . Noralyn Paper Mills Inc., with offices in Gidden Lanes Bldg., Shreveport, La., has taken an option on a site for a 150 to 250 ton mill in St. James Parish in south Louisiana, to make newsprint and other products by a continuous pulping process patented by John Natwick. Leo L. Stack is president.

PULP PROJECTS IN SOUTHWEST U.S.A. . . . In the Southwest states, there is a "coming awareness" of advantages of pulp operations due to abundance of low grade and small stem timber, says Reino R. Sarlin, forestry chief for Navajo Agency in Window Rock, Ariz. In El Paso, Tex., Tempron Corp. is building a mill to make hardboard from creosote brush and other brush species. There is talk of a pulp operation in New Mexico. A 40-ton groundwood mill is being operated at Flagstaff, Ariz., by Arizona Pulp Co. Pulpwood has been purchased but financing is holding up plans for a large pulp-paper mill at Snowflake, Ariz. A mill projected at Winslow, Ariz., by Navajo Pulp & Paper Co. is not using Indian timber, said Mr. Sarlin.

MACHINES DUE. . . . Whippany Paper Board's "Metropolitan," which stretches more than 600-ft. from its 8-cylinder vats (234-in. wide) to its rewinder, has been making salable test liner from start-up. Its sister machine, a 250-in. Fourdrinier, the "Twentieth Century," with an 180-ft. wire, will start up sometime in May-June, 1958.

MILLS FOR DEPRESSED AREAS may be in the offing, according to a proposed bill before Congress. The United States government would sponsor pulp and paper mills in such areas if private companies can't be persuaded to build them.

PLANS BOARD MILL. . . . Melvin H. Baker, chairman of National Gypsum Co., announced construction would start soon on a large building products plant at Waukegan, Ill. The plant will be ready for production next year. Mr. Baker said, "We feel certain our country is approaching a growth era for which present production facilities will be inadequate."

TO MODERNIZE MILLS. . . . A $400,000 program designed to increase the efficiency of its paper machines has been started by Allied Paper Corp. This includes equipping each of nine paper machines with flotation type Sveen-Pedersen save-alls.

INSTALLS DUST AND ODOR CONTROL EQUIPMENT. . . . Fiberboard Paper Products Corp. has begun construction of new dust and odor control equipment at its San Joaquin pulp and board mill in Antioch, Calif. Included will be a flue gas washer, 80 ft. tall gas incinerating furnace, 10,000 cu. ft. gas holder and a 40 ft. high black liquor oxidizing tower. . . .

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Paper Mill Equipment, Ltd., 320 Dominion

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Other News

ADVISES WISCONSIN GROUP TO ADVERTISE. . . . The Wisconsin Paper Group, non-profit pool car agency for 19 member companies, shipped orders in 3,130 pool cars in 1957, second highest total in its history. With 3,174 cars, 1956 was slightly higher. The 1957 figure is nearly double the record of the mid-1930's. John Wilterding, Geo. Banta Co., was elected president, Thomas Leech, Whiting-Plover Co., vice pres., and Leo O. Schubart, Neenah Paper Co., secy-treas. Fred Leech, Riverside Paper Co., urged advertising the services and advantages to paper merchants throughout U. S.

THREAT TO LIMIT LAND HOLDINGS. . . . T. N. Busch of International Paper Co. informed an APA meeting in Shreveport, La., of attempts to set limitations in land ownership. Within the past year a grass roots movement to limit acreage of land which may be owned by a corporation has gained headway. The strength behind this movement is at the country-crossroad store level, he said. The heavy rural migration to urban centers is having its adverse economic effect. Georgia recently provided some cause for alarm and similar conditions exist in Mississippi. There is a bill pending in Georgia which would stipulate a severance tax amounting to $1.00 a cord be charged on all wood cut off paper company lands.

SUES TO CLARIFY RIGHTS. . . . Rice Barton Corp. has sued Scott Paper Co. to establish that use of Rice Barton machinery employing a suction breast roll did not infringe Scott's U. S. Patent no. 2,418,600. According to Rice Barton, this action, in U. S. district court in Boston, became necessary because of Scott's position in a patent suit in Florida against Hudson Pulp & Paper Corp.

ACQUIRES MUCH TIMBER. . . . International Paper Co. has arranged with Harbor Plywood Corp. for purchase of long-term cutting rights on 27,700 acres of timberland in southwestern Washington and final settlement of litigation resulting from a suit instituted two years ago by Harbor Plywood against Long-Bell Lumber Co. IP agreed to pay $2 million in connection with the settlement.

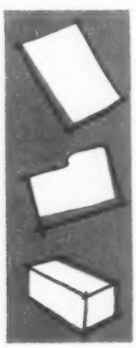
GEORGIA-PACIFIC SALES PLANS. . . . Sales of production from Georgia-Pacific Paper Co's. new plant at Toledo, Ore. are handled by the following: Unbleached kraft paper and board — Cupples Co., San Francisco, Los Angeles, Salt Lake City, Portland and Seattle; the Stone-Hall Co., Denver; Price & Pierce Sales Co., New York and Kalamazoo, for east and midwest states. Unbleached kraft pulp — Reinhold-Gould, Inc., New York, for all domestic sales.

BIG INVESTMENT. . . . Weyerhaeuser Timber Co. invested $56.8 million to capital expenditures in 1957, second highest in the firm's history. The timber company's recently issued annual report states that expenditures for plants, equipment and roads totaled $41.8 million, $14.9 million for timber-timberland acquisitions. For the past 10-year period capital expenditures have aggregated $441 million.

CLOSES NASHVILLE PLANT. . . . Operations at the Nashville, Tenn. paperboard mill of The Mead Corp. were shut down March 7. Closing of the mill, which began operations in 1933, is due to economic conditions. Employes receive a separation allowance based on earnings and service, and many will be eligible for vacation pay and retirement benefits.



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in the beater—tissue, bond, cover, specialty papers

at the size press or water box—bond, cover, bristol, index, specialty papers, boxboard

at the calendar or dip dyeing machine—boxboard, crepe paper

Can be used as a self whitener or in conjunction with quality tinting blues: Solophenyl* Blue 2RL-3RL-8GL.

For better whites... Tinopal PW 300%+Solophenyl Tinting colors!

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IN GREAT BRITAIN: The Geigy Co., Ltd., Manchester

WORLD PULP & PAPER General News

Will Study Mill Sites in Europe

Vancouver, B. C. . . . Sandwell and Co. Ltd., consulting engineers, have been retained by the Organization for European Economic Cooperation to survey possibilities of establishing small pulp mills in Europe. Eight countries participating, through the OEEC, are Austria, Belgium, Denmark, France, Holland, Italy, Republic of Ireland and the United Kingdom. P. R. Sandwell, president, says purpose of the survey is to establish the technical and ecenomic feasibility of the mills, using relatively small and scattered sources of fibrous raw materials.

Will Install No. 2 Machine

Penrose, New Zealand . . . Sir David Henry, chairman and managing director of New Zealand Forest Products Ltd., announced plans to install a second paper machine, chlorine plant and bleach plant costing approximately $5.6 million at Kinleith mills. The new equipment, to be running by 1960, is expected to save up to $2.8 million annually in foreign exchange. Sir Henry recently returned from a six month business trip to Europe and North America. This project is the first step in a four-year, $10.8 million expansion plan, which will increase production by 13,750 tons annually to nearly 44,000 tons.

West German Firm Expands

Wiesbaden, West Germany . . . Expansion and improvements at mills of Zellstofffabrik Waldhof include additional screening units at pulp mills in Mannheim and Wangen and a tower bleaching installation and polyethylene lamination plant at Mannheim. A purifying plant for industrial water is being installed at the Kostheim works.

Swedish Units for Great Lakes

Stockholm . . . SF Products Canada Ltd., subsidiary of Svenska Flaktfabriken AB, Stockholm, will install ventilating and heat recovery systems for the 342-in. newsprint machine now being built for Great Lakes Paper Co. Ltd., Fort William, Ont.

Hardboard Mill Opens in Cuba

Francisco, Camaguey, Cuba . . . A $3,600,000 plant is to start here this month, making hardboard from bagasse. It is claimed a process dedeveloped by Tayler Corp., New York City, makes bagasse board that is 15 to 45% stronger than woodpulp board. Mr. Taylor will operate the plant for Cia. Cubana Primadera, S.A., a company formed by the New York investment firm of Wood, Struthers and Co. and Francisco Sugar Co.

A 200-kw Thermex unit by Girdler Process Equipment Div. of National Cylinder Gas Co. dries fiber mats electronically, processing 200 4-by-8 ft. panels per hour. Similar systems made by Girdler are operating in Finland, Sweden and Israel. Mats go to a hydraulic press that can exert up to 4,000 tons pressure. The mill can use the process to make insulating soft board.

Grace Forms Latin American Div.

New York . . . W. R. Grace & Co. has formed the Grace Paper Co. Div., headed by Wentworth Brown, pres., to administer the company's $50 million expansion program in Latin America. It will function as part of the Latin American Paper and Chemical Group under John T. Whitely, exec. vice pres. It includes the 15-year-old Peruvian bagasse operation and new plants in Brazil. Grace is building a bagasse pulp and paper mill in Puerto Rico, expected to start up by April, 1959. In Mexico, Grace purchased last August Envases Aztlan S.A., a carton folding plant in a suburb of Mexico City. The M. J. Diaz y Cia. converting plant in Havana, Cuba, was purchased a year ago and is now operated as Envases Industriales y Comerciales S. A. It makes corrugated containers, bags, wrapping, etc.



DeZurik ..... Massey ..... Vohs

BRITISH ENGINEERS STUDY MANUFACTURING methods . . . at DeZurik Corp., Sartell, Minn. Representatives of Millspaugh, Ltd., Sheffield, England, manufacturers of DeZurik products for British and European markets, visited the plant recently. Pictured above are David DeZurik, Sr., pres. of DeZurik, Fred Massey, supt. and Robert Vohs, mgr. of Millspaugh's DeZurik div.

TAPPI Conference in Italy

Turin, Italy . . . The 1958 conference of the Study Group of European TAPPI will be held in Turin from Sept. 10-15. The Italian local committee, which is organizing the conference, is under chairmanship of Dr. P. Bersano of Cartiere Burgo. Anyone who desires to contribute a paper is invited to communicate with Prof. Karl Adamik of Technischen Hochschule, Graz, Austria, or I. F. Hendry, Wiggins Teape Group Research Organization, Butlers Court, Beaconsfield, Bucks, England.

To Use Paper instead of Wood

Stockholm . . . Swedish producers of corrugated board are reported to have obtained a large contract for containers from Spanish fruit packers. With this order they are making the first large-scale attempt to replace the traditional wooden boxes with other material. The initiative was taken by the Swedish firm Billingsfors-Longeds AB and Leje & Thurne AB, while the contract has been distributed to all Swedish makers of corrugated board for 2,665,000 containers valued at $500,000.

Need Foresters

Rome . . . Liberia will need at least 80 professional foresters within the next ten years, according to Dr. F. A. Querengässer, who was recently at the headquarters of the Food and Agriculture Organization (FAO) in Rome. There are, he said, good prospects of employment both in the public administration and private industries. Dr. Querengässer has been director of the Forestry School at University of Monrovia since 1956.

Engineers Combine in France

Montreal . . . Stadler Hurter International Ltd. announces that they will be represented in Continental Europe —with the exception of the Scandinavian countries—by the prominent French consulting firm of Serete, 164 Rue de Rivoli, Paris.

Under the agreement Stadler Hurter will furnish process, layout and pulp and paper mill design know-how to European clients, and Serete will furnish civil and structural engineering, steam and power plant design and detailed mechanical design service for the pulp and paper industry, under the supervision of Stadler Hurter.



Let the Uniform Chips Fall . . .

Wood chips, uniform in size, cook evenly – resulting in more uniform bleaching for a better quality pulp and paper.

Under its program of Quality Control, Eastex maintains this uniformity through careful attention to every detail. Thus, meticulous concern extends from selection of wood through automatic cooking of chips, bleaching of pulp to the ultimate production of market pulp and a wide range of special board grades.

***Uniformity* is one of the important considerations at Eastex . . . another reason why the name Eastex is highly regarded by those who demand a quality product.**

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WORLD PULP & PAPER Technical News

No Iron Curtain on Reports

Studies from Poland, Czechoslovakia and Sweden are among the timely and interesting technical developments reported from abroad this month.

(Presented with permission of The Institute of Paper Chemistry, under supervision of Curtis L. Brown, editor of IPC Bulletin. Photostats or translations of original reports available at reasonable cost by writing Eugene Bunker, librarian, Institute of Paper Chemistry, PO Box 498, Appleton, Wis.)

Pitch Trouble in Bleaching

LIDBY, PER OLOF, and STOCKMAN, LENNART. Svensk Papperstidn. 60, no. 23: 878-82 (Dec. 15, 1957). [In Swedish; English and German summaries] Bull. Inst. Paper Chem. 28:834.

A sulfite mill manufacturing bleached paper-grade pulps from a chip charge containing 20% by volume of birchwood experienced troublesome pitch agglomerations in the later stages of bleaching (using a conventional three-stage chlorine-alkali-calcium hypochlorite system followed by acid wash) and on the pulp drying machine. Insertion of an extra alkaline extraction stage prior to chlorination had a very beneficial effect on "sticky pitch" formation and on pulp brightness but did not appreciably diminish the extractive content or viscosity of the pulp. Substitution of chlorine dioxide for the chlorination stage gave similar improvements and, in addition, considerably decreased the extractive content. C.L.B.

Making Transparent Paper

RACZYNSKA, ZOFIA. Przeglad Papierniczy 13, no. 8: 233-6 (Aug., 1957). [In Polish; Russian and English summaries] Bull. Inst. Paper Chem. 28: 826-7.

A technological procedure for the manufacture of transparent paper having a basis weight of 50 g./sq. m., and designed for topographical field sketches was developed. Bleached sulfite parchment pulp is beaten to 75°S.-R.; then a melamine-formaldehyde resin suspension (0.5% on a dry-pulp basis), potassium stearate solution (1% of stearic acid on a dry-pulp basis), and a 10% alum solution (adjusted to pH 4.5) are added in several portions; and pulp is beaten to 81°S.-R. The paper web, formed in the usual way on the paper machine (at a speed of 32 m./min.), is coated by immersion in a 1% solution of potassium stearate at 40-50°C. and glazed in a calender or a board-laminating machine. The paper is characterized by good transparency, good mechanical strength properties, high water repellency, and high dimensional stability (a longitudinal deformation coefficient of 0%, and a transverse deformation coefficient of 0.5%). It is suitable for sketching with pencil, writing ink, or China ink. J.S.

Cellulose Quality Test in Poland

SLAVIK, IVAN. Chem. zvesti 10: 460-7 (1956). [English translation] Bull. Inst. Paper Chem. 28: 788.

A method for determinating the quality of cellulose by its degree of polydispersity is described, in which the fluctuation of the ratio of viscosity to the average D.P. is expressed numerically. In this method, the viscosity of a solution containing 10 g. cellulose/liter is determined in the Höppler viscometer; after dilution with cuprammonium reagent to a concentration of 0.5-1.0 g./liter, the viscosity is redetermined in an Ubbelohde flow viscometer. The ratio of the two values, calculated from Philipoff's formula, expresses the approximate polydispersity of cellulose. The method may be used for the characterization of native cellulose, alkali cellulose, and viscose. 1 table and 13 references. J.S.

Making Vanillin from Sulfite Liquor

WAWRZYNIAK, HENRYK. Przeglad Papierniczy 13, no. 8: 249-51; no. 9: 281-6 (Aug., Sept., 1957). [In Polish; Russian and English summaries] Bull. Inst. Paper Chem. 28: 811.

In production of vanillin, the neutralization of the alkaline hydrolyzate (to a pH of 4.0) at 40°C. causes difficulties in the subsequent steps, notably formation of hard masses of coagulated lignin in extractors and losses attributable to sorption of vanillin by coagulated lignin and to incomplete solvent recovery. The following changes are suggested to eliminate the difficulties by removing a large percentage of lignin from the acidified hydrolyzate: conduct the neutralization of 70-80° to obtain complete coagulation of lignin; shorten the neutralization time to 15-30 min. to minimize sorption; cool to 50-55° and remove the coagulated lignin by centrifugation; and use 50% sulfuric acid instead of 35% to decrease corrosion. Since the maximum increase in sorption occurs at 40-60°, the loss of vanillin by sorption during neutralization at 80° is relatively high (19-21%); however, it is partially compensated by higher yield obtained by extracting a homogeneous filtrate and may be further decreased by improvements in extraction. J.S.

Bleaching, Washing Effects on Pulp

BOGUSLAWSKI, LECH, MODRZEJEWSKI, KAZIMIERZ, and WESOLOWSKA, WALENTYNA. Przeglad Papierniczy 13, no. 6: 161-4 (June, 1957). [In Polish; Russian and English summaries] Bull. Inst. Paper Chem. 28: 841-2.

To investigate the effect of the quality of water used in the bleaching and washing processes on the ash content of dissolving pulp, a series of experiments were conducted in which water of different pH and degree of hardness, as well as dimineralized water, was used in all bleaching stages (chlorination, alkalization, hypochlorite treatment, and acidification) and for washing. A direct relationship between the hardness of water and ash content of pulp was found at all bleaching stages. However, to obtain a dissolving pulp of sufficiently low ash content (0.1% or lower), the use of demineralized water throughout bleaching is not necessary. Satisfactory results are obtained by using demineralized water only toward the end of bleaching, notably for washing (after alkalization and after hypochlorite treatment to remove the adsorbed sodium ions) and for preparation of the final acid solution, and by using sodium hypochlorite (freshly prepared solutions) instead of calcium hypochlorite. The most effective removal of ions from pulp takes place during final washing with acid. A 1% solution of hydrochloric or sulfurous acids is recommended for pulps of average ash content, and a 2% solution for pulps of high (above 0.8%) ash content. J.S.



Scriptite 40 is a *new* concept in urea formaldehyde resins for paper finishing. Because this water-soluble resin has been made more cationic, it is strongly attracted to the cellulose, assuring high efficiency in application. Scriptite 40 provides faster cure, and paper products maintain a higher wet strength value with less resin add-on than is usually required. Scriptite 40 also can improve dry tensile, mullen, wet rub resistance, dimensional stability, folding endurance.

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The Monsanto Line of Paper Resins also includes

SCRIPTITE 54 . . . *for outstanding water resistance and both wet and dry rub resistance.*
SCRIPTITE 52 . . . *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner.*
SCRIPTITE 50 . . . *for unsurpassed printability and improved surface characteristics on boxboard.*
SCRIPTITE 33 . . . *a melamine wet-strength resin.*
SCRIPTITE 45 . . . *a new thermosetting resin for the stabilization of paper.*
LYTRON* . . . *water dispersal resin polymers for coatings.*

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Monsanto

PENT-UP ENERGY destroys paper...

It can crack a roll like a dried log. It is also a major reason for costly snap-offs when feeding to printing presses or converting processes.



CAMERON

Automatic Roll Density Controller*

PUTS PAPER TO SLEEP!

HERE'S HOW IT WORKS:

(see diagram at right)

At the start of the run the rewind drums and riding roll are driving the rewind roll to assure tight starts and firmly set cores.

(see diagram below)

At a predetermined diameter the Automatic Roll Density Controller is engaged. As the rewind roll increases in diameter the Density Controller absorbs an increasing amount of energy from the rewinding roll... removing energy that would normally be "locked in" the rewound roll. Most of the energy removed from the rewinding roll is regenerated and fed back to the main drive.

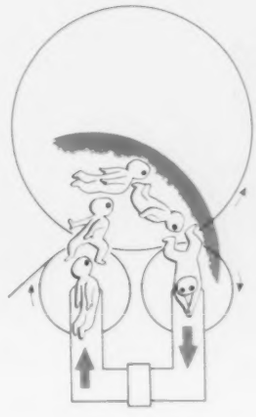
The fully Automatic Roll Density Controller provides optimum roll quality . . . rolls that will not burst, but firm enough to be shipped and handled without "flatting" or other damage.

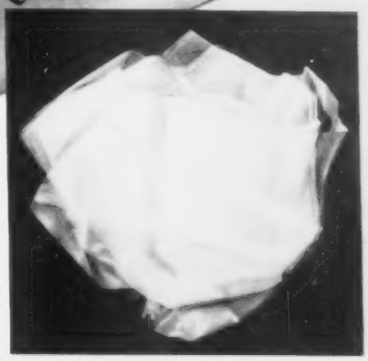
In contrast to the principle of absorbing energy by speed differential between rewind drums, the Automatic Roll Density Controller absorbs energy externally, avoiding scuffing and scratching of the sheet... there is no slip of the roll relative to the rewind drums.

The Cameron Automatic Roll Density Controller is another example of the time-and-money-saving inward excellence of Cameron winders. Cameron specialists welcome any opportunity to show the way to dependable, low cost, high speed production of better rolls of any material.

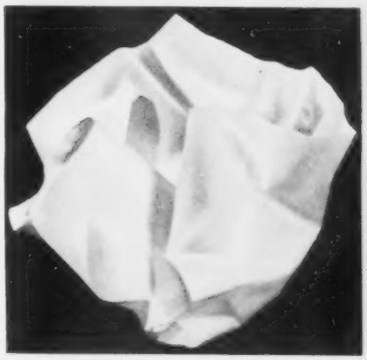
* PATENT APPLIED FOR







Crumple a piece of paper and toss it on your desk. The small measure of energy applied by your hand is stored in the paper. Watch the paper move, stretching and twisting, as the pent-up energy seeks release. **In a similar way,** the winding operation stores active energy in paper rolls. This pent-up energy, seeking release, is a major cause of damage to paper in shipping and storage.



In a few seconds, the energy stored in the crumpled paper has been released. The paper will now remain "asleep" indefinitely. **The energy** stored in paper rolls by the winding operation is removed by the **CAMERON Automatic Roll Density Controller.** The Density Controller puts the paper to sleep, eliminates snap-offs caused by rolls wound too hard, permits winding larger diameter rolls to feed presses through longer running time, reduces damage in shipping and storage.

Cameron Machine Company, Franklin Road, Dover, N. J.

Canada: Cameron Machine Co. of Canada, Ltd., Royal Bank Bldg., Toronto 1

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50 years devoted exclusively to the design and manufacture of slitting and roll winding equipment.



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CHIPS BURN...

BUT PAPER REMAINS STRONG AND CLEAN . . . THANKS TO CENTRI-CLEANERS

The fire in the chip bin was relatively small. Production men were worried . . . should they try to use the fire-charred chips? Would their cleaning equipment take out the carbon? It was a risk, but they charged a digester. The resulting pulp going over the bleach plant washer looked bad.

At the Centri-Cleaners, things looked much brighter. All of the bits of charred wood were being removed and the pulp was left clean. Not a pound of pulp was lost, and the resulting paper was the usual clean, high quality product.

This incident occurred in the sulphite mill of a large eastern paper company. It parallels many other stories attesting to the effectiveness of Bauer Centri-Cleaners. Do you have a cleanliness problem? Wire, write or call FAirfax 3-5501.

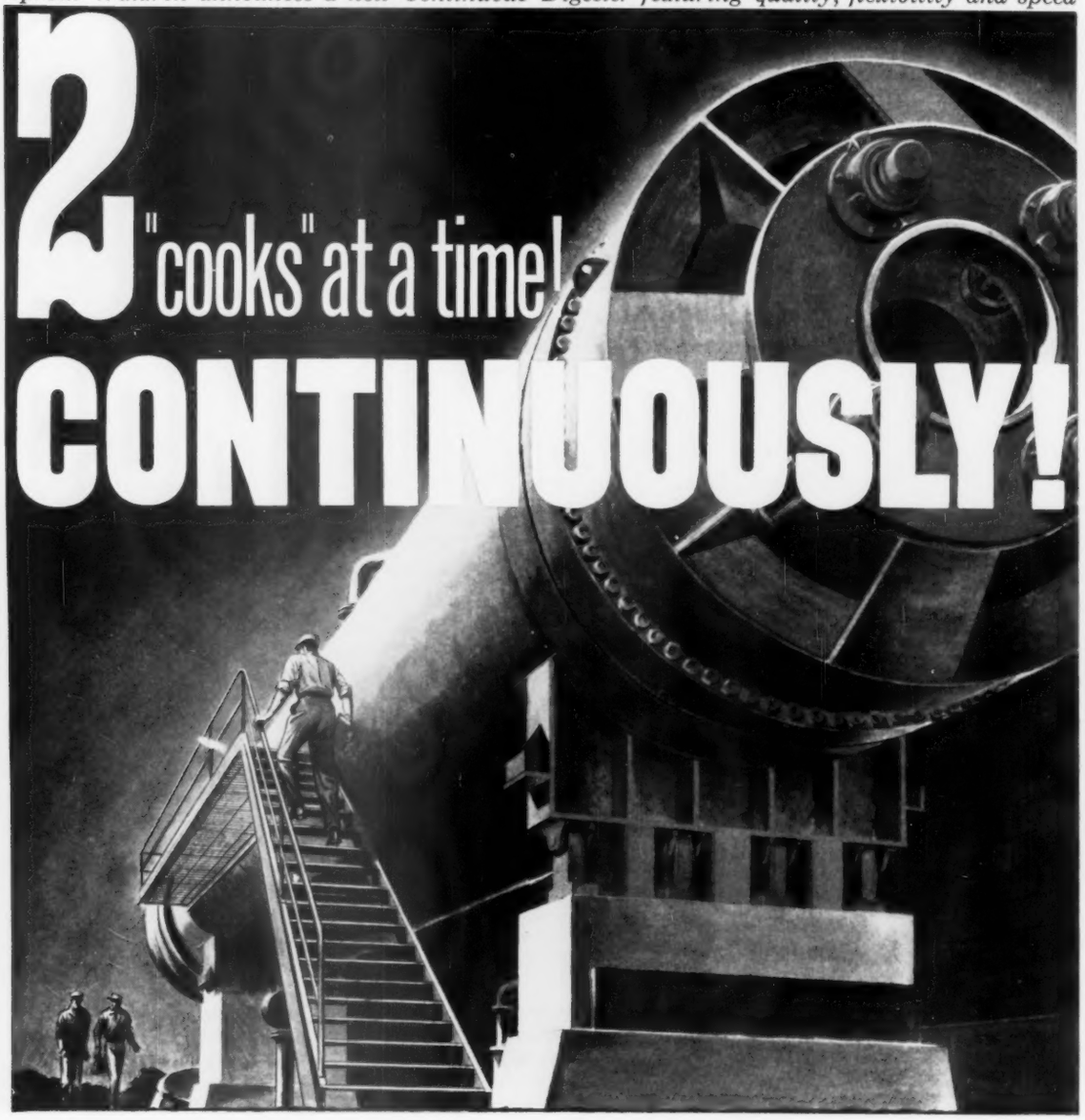


THE BAUER BROS. CO.

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Sprout-Waldron announces a new Continuous Digester featuring quality, flexibility and speed

2 "cooks" at a time! CONTINUOUSLY!



Improved yield and uniform pulp now available at high speed and low cost

The Sprout-Waldron "Twin" opens a new concept in continuous pulping, offering improved yield, uniform pulp, high speed, flexibility, and low installation, operating and maintenance costs. Really two independent units in one, each half of the Sprout-Waldron Digester is self-contained and can process chips at different rates and with different chemicals, providing a degree of flexibility unavailable in any other system.

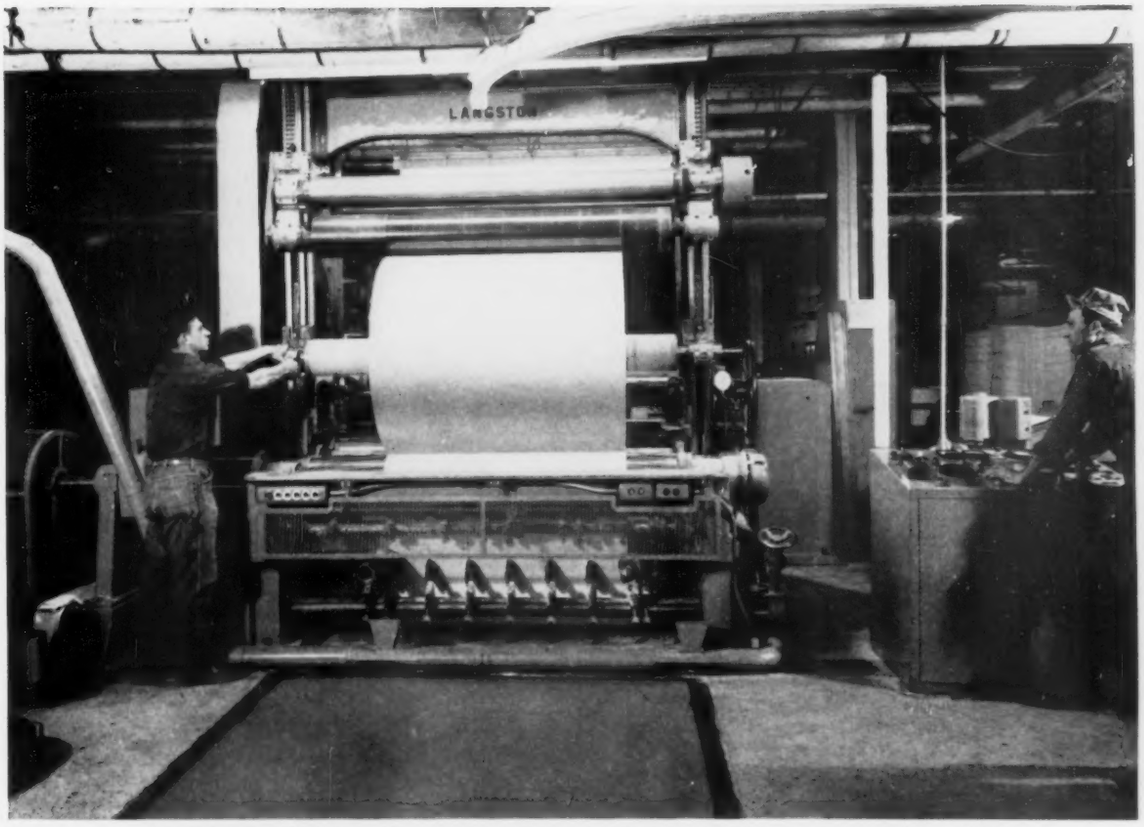
Advantages of the Sprout-Waldron Continuous Digester include: short cooking time (12 to 15 minutes for semichemical, 30 to 35 minutes for kraft or bleached type chemical pulp); high liquor to wood ratio; low chemical cost; improved yield; uniform pulp; flexibility; economy—lowest installation cost and horsepower days per ton of any continuous digester. For the full story, ask for our new illustrated Bulletin 196.

SW SINCE 1866

SPROUT, WALDRON & CO., INC. MUNCY, PENNA.

REFINERS • DIGESTERS • CONVEYORS • FEEDERS • SCREENS • MIXERS • DRAINERS • FIBER PRESSES • STOCK PROPORTIONERS

D-101



New 72-inch Type CA Langston Slitter and Winder in Marathon Corporation finishing room handles rolls up to 60 in. in diameter at speeds up to 1500 ft. per minute. Finished rolls are lowered by hydraulic drop shown in foreground.

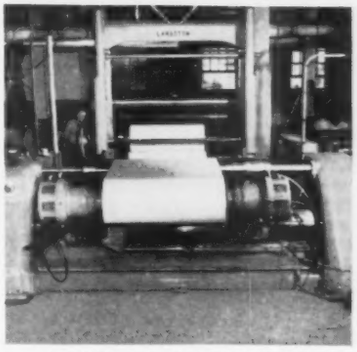
New Langston Slitter and Winder helps Marathon cut operating costs

This new Langston Slitter and Winder installation at Marathon Corporation's Rothschild, Wis., mill is already helping the company cut costs and speed processing of quality paper and board.

For example, the power-operated shaftless unwind stand virtually loads itself. No crew is needed to bull heavy shafts into place. And the Langston hydraulic roll ejector permits 1-man removal of finished rolls. These two features alone are saving Marathon several thousand dollars a year. Water-cooled Wichita-type air brakes can be operated from control console.

Besides effecting major operating economies, these Langston machines also pay off in higher quality rolls. The hydraulic rider roll control, for instance, automatically keeps nip pressure constant, regardless of the diameter or weight of the rewound roll. This insures rolls of uniform density with reduced tendency toward wrinkling or telescoping. The shear-cut slitters cut like scissors instead of a knife, shearing cleanly and keeping paper dust to a minimum. The resulting clean-edged, dustfree rolls are easier for customers to process.

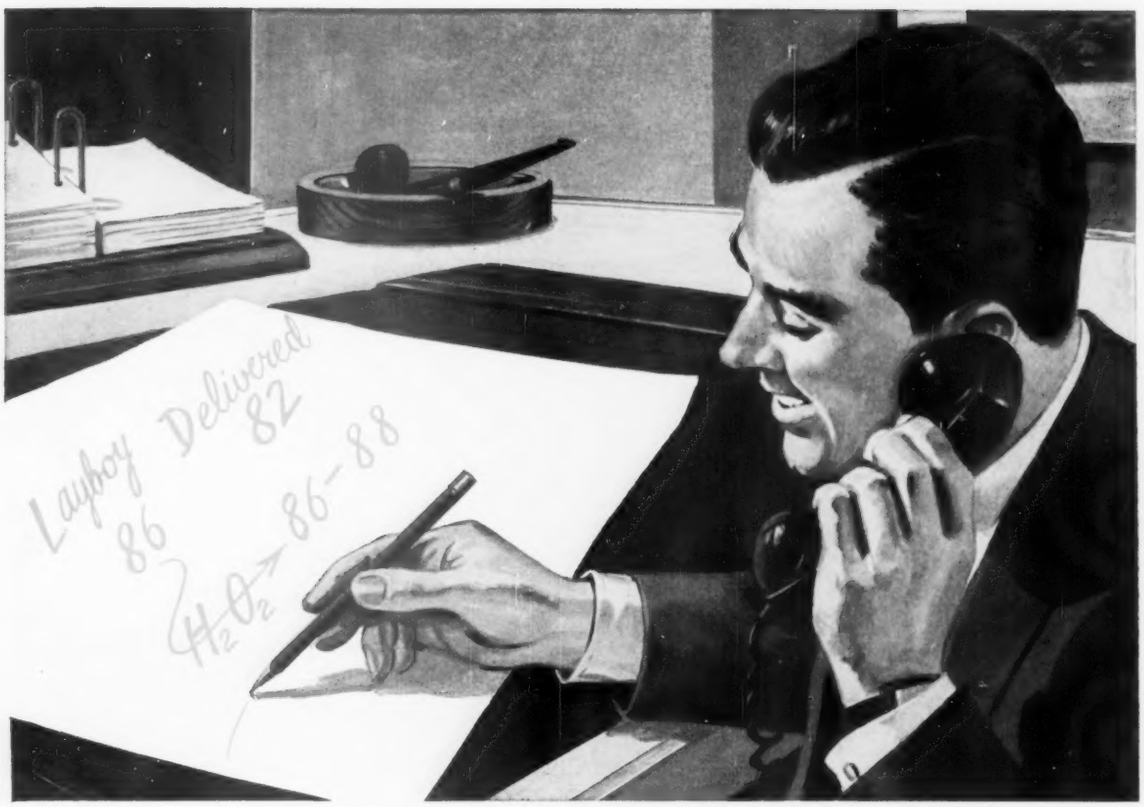
Learn how you can benefit from the advantages of Langston Slitters & Winders. Write SAMUEL M. LANGSTON Co., 6th & Jefferson Sts., Camden 4, N.J.



Langston Shaftless Unwind Stand eliminates the time-consuming, back-breaking task of hoisting heavy shafts into place. The hydraulically actuated arms reach out, pick up the roll and lift it to running position—a 1-man, push-button operation.



LANGSTON Leadership...by design



A last-stage H_2O_2 treatment improves brightness permanence!

Want to be sure your pulp retains the same brightness level on delivery as it had at the layboy? Then use Becco's Dryer Steep Bleaching Process, patented, but freely available to the industry.

Many pulp producers have found Dryer Steep Bleaching an adaptable, highly efficient method for super-bleaching chemical pulp to high brightness with minimum capital investment. Applied by means of spray pipes across the pulp sheet ahead of the dryers, hydrogen peroxide solutions increase brightness permanence, giving higher brightness both at the layboy and after many weeks' storage and/or shipment.

In integrated operations, a Becco Hydrogen Peroxide treatment can, of course, be given to the pulp in a final bleach plant stage to improve brightness and its retention. When pulp is sheeted, however, Becco's Dryer Steep Bleaching Process is preferred for achieving lasting brightness, and may often result in a reduction of the amount of other chemicals used in the bleach plant.

Becco Dryer Steep Bleaching is applicable primarily to bleached or partly bleached chemical pulps. On all pulps Becco has a vast amount of technical knowledge compiled from years of experimentation and field work. A Becco trained technical representative will be glad to help you solve any bleaching problem you may have. Write us, requesting his help. At the same time, ask for your free copy of the following technical bulletins:

48. High Density Pulp Bleaching
64. Development Studies on Last-Stage H_2O_2 Bleaching of Alkaline Pulps
91. Peroxide Bleaching of Chemi-Mechanical Hardwood Pulps
92. Peroxide Bleaching of Chemical Pulps

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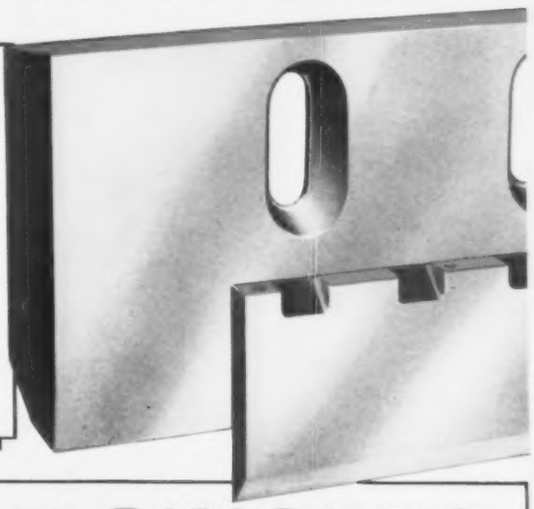
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For more usable chips and less waste dust, get Simonds T-18 Steel Knives. They're made extra tough to take high speeds and heavy cuts without cracking or chipping out. They hold a sharp cutting edge *hours longer* — produce uniform chips *hours longer*.





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Simonds-made S-301 Steel — developed especially for cutting paper — combines maximum hardness with toughness to give you more cuts per grind. Face-side taper, concave ground for added clearance, plus Simonds famous "mirror finish," provide a keener edge that cuts free, fast and straight. There's longer life in a Simonds Knife!

-with SIMONDS Circular Cutters

They Run True and Hold Their Edge!

On thinnest tissue or thickest board, Simonds circular cutters, slitters and perforators cut smooth, easy and true. These "cost cutting cutters" are made of Simonds own special electric-furnace steel — specially heat treated and precision-ground to uniform roundness and thickness. There is no better steel for edge holding. There is no better value for your cutter money.



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THE POLICY

to give Rayonier wood pulp customers an edge on their competition

"Today, Rayonier is a major supplier of wood pulp to the paper industry. Rayonier will remain a major supplier, tomorrow and in the years ahead."

Rayonier president, Clyde B. Morgan, can underwrite this policy because . . .

1. Rayonier Has New and Enlarged Production Facilities. With our new Jesup, Georgia unit now in production we are firmly entrenched as a major market supplier of quality bleached wood pulps. Have you seen JBH? Our new sulfate hardwood pulp gives you new opacity, brightness, strength, formation and bulk.

2. Three Major Production Areas: the Southeast for our top grade sulfate pulps—both softwoods and hardwoods; the Pacific Northwest and British Columbia for our quality sulfites. Diversification and versatility assure matchless product and delivery reliability . . . plus the flexibility to meet your changing needs.

3. Direct Sales. Our sales policy for bleached wood pulps is direct manufacturer contact with our customers. Our own sales force calls on you. Have you met your Rayonier Sales Representative? He's got a digester-full of profit opportunities for you.

4. Research and Technical Services. Every product is heavily supported with on-the-spot-technical services—and at a moment's notice! This service is further backed by our three advanced research divisions in the U.S.A. and Canada . . . additional assurance that quality performance and all other benefits are yours from Rayonier wood pulps.

5. A Basic Raw Material Supplier. Rayonier's complete line of wood pulps is supplemented by the most complete line of chemical cellulose in the industry. Above all, Rayonier is first a supplier of basic raw materials.

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RAYONIER

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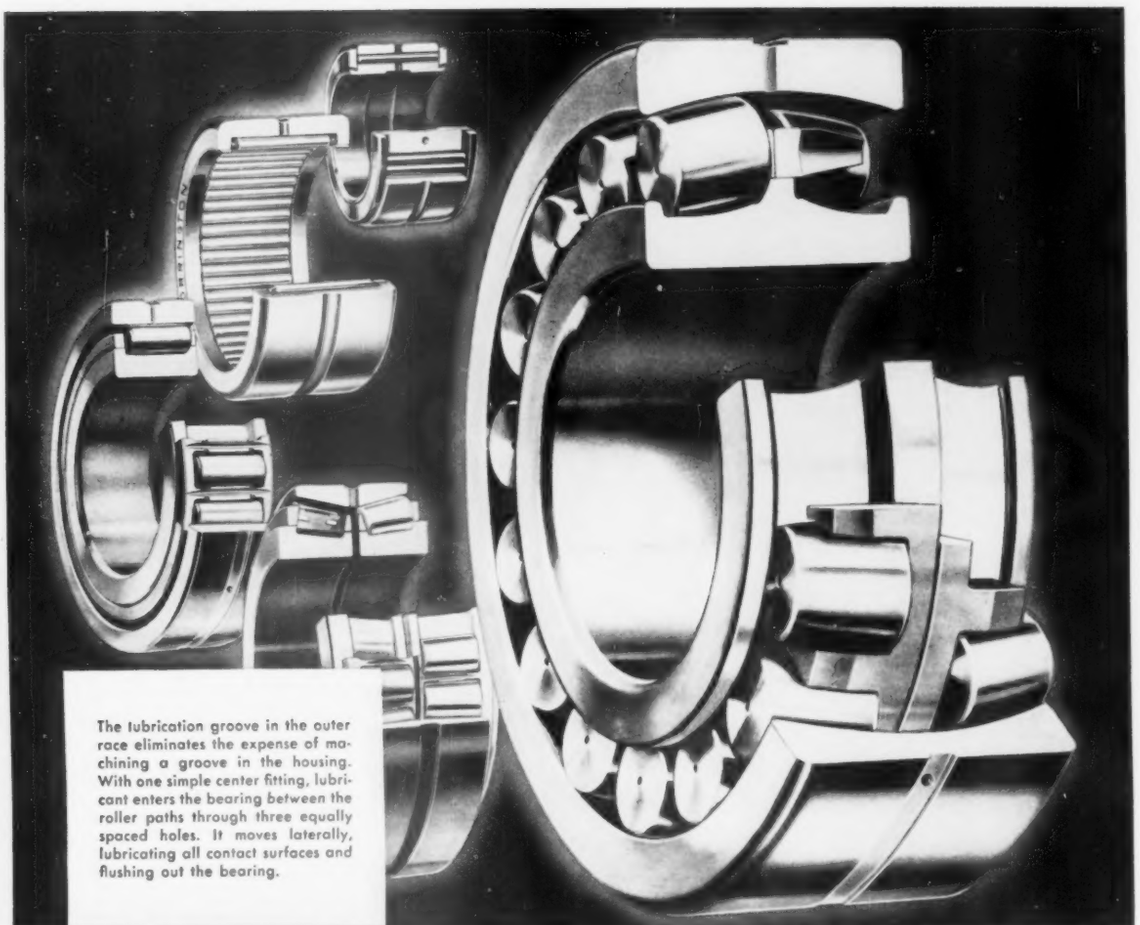
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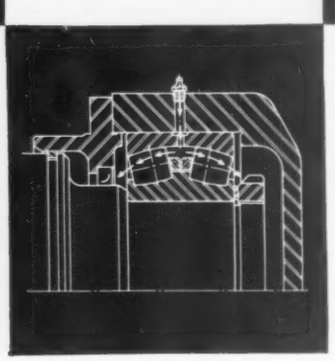
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The lubrication groove in the outer race eliminates the expense of machining a groove in the housing. With one simple center fitting, lubricant enters the bearing between the roller paths through three equally spaced holes. It moves laterally, lubricating all contact surfaces and flushing out the bearing.



A time-proved lubricating method now available on Torrington Spherical Roller Bearings

The circumferential groove in the outer race has met the test of experience in many Torrington Bearings, including Heavy Duty Needle Bearings, Aircraft Type Needle Bearings, Tapered and Radial Roller Bearings. Now the circumferential lubrication groove is available in Torrington Spherical Roller Bearings.

This design feature makes it possible to introduce lubricant *between* the roller paths without the expense of machining a groove in the housing. This groove is proportioned to provide generous lubricant flow capacity. Lubricant moves through the roller paths, flushing used lubricant and contaminants away from bearing contact surfaces.

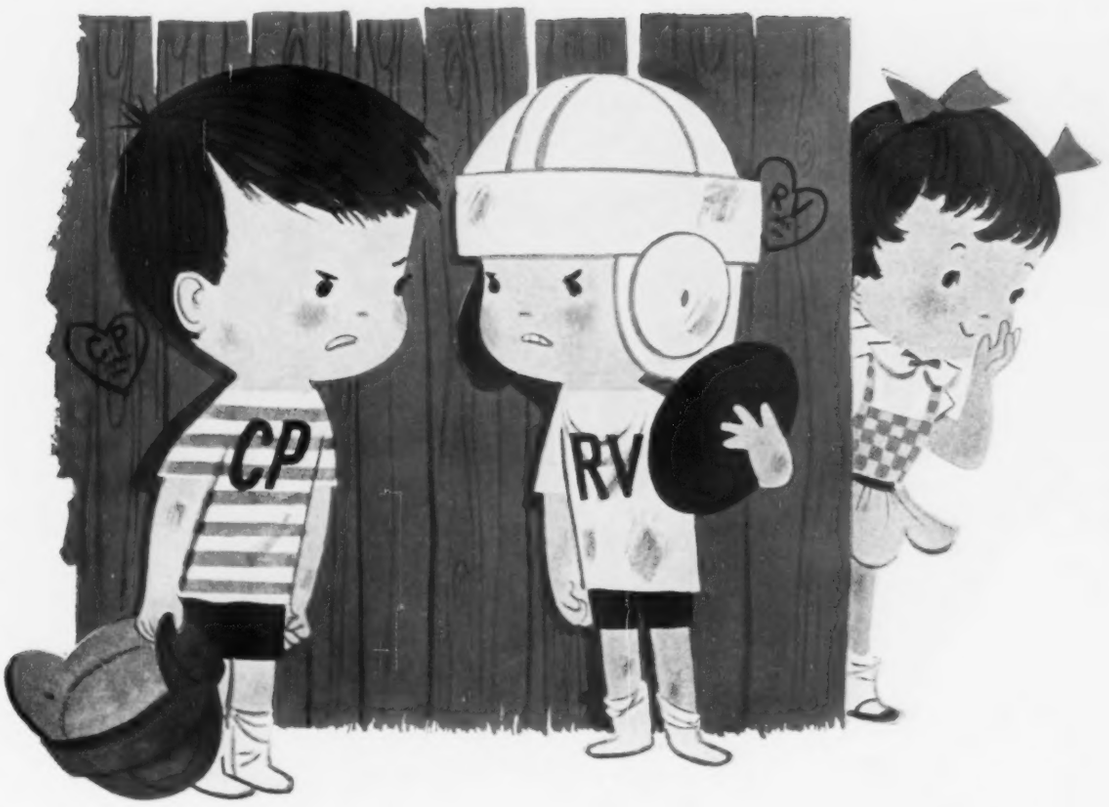
Torrington Spherical Roller Bearings in many sizes may be ordered with this groove as desired at no additional cost. For further information, see your Torrington representative or write: **The Torrington Company, South Bend 21, Ind.—and Torrington, Conn.**

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Both Uscolite RV and Uscolite CP have been carefully engineered to solve particular corrosion problems. Our technical men will help you select which is better for the service conditions involved.

Both types of Uscolite are extraordinarily resistant to corrosion. They are non-contaminating, odorless, impart neither taste nor discoloration. Uscolite's numerous applications throughout industry continue to multiply.

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Look for the name Uscolite—and the right initials. They assure you of the best plastic pipe and fittings for your specific job.

Mechanical Goods Division

United States Rubber

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"Firsts" alone are not the answer. But the continued, *growing* importance of Cyanamid's innovations have kept Cyanamid the leader in supplying chemical products to the paper industry.

We've listed several "firsts" by which Cyanamid has brought new markets, new qualities and new economies to paper mills. They are representative of the most extensive line of paper chemicals offered to papermakers by any one company.

Your Cyanamid Paper Chemicals representative will be glad to assist in selecting those products or grades that can benefit your product.

a leader?



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FIRST with TALL OIL SIZES and LIGHTER ROSIN SIZES — These are just two of the many sizing innovations from Cyanamid that have brought versatility, bright color, and better performance qualities to papers and boards.

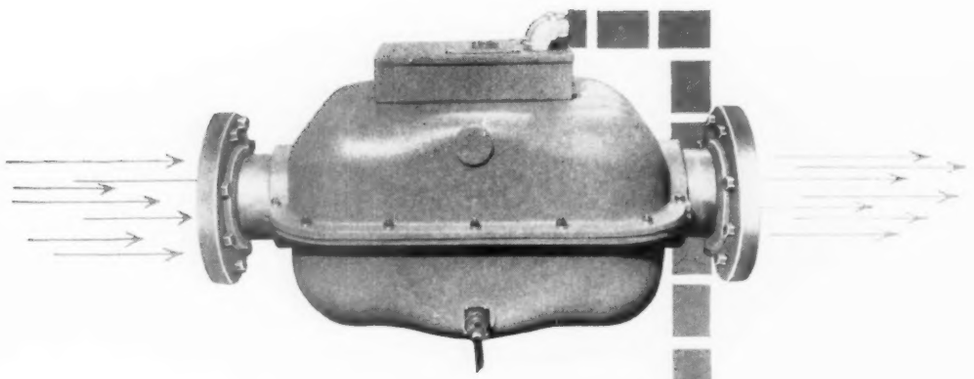


FIRST with the Surface and Flexibility benefits of WAX SIZES — Developed by Cyanamid, microcrystalline waxes provide excellent water and scuff resistance, as well as improved flexibility, to a wide range of paper products.

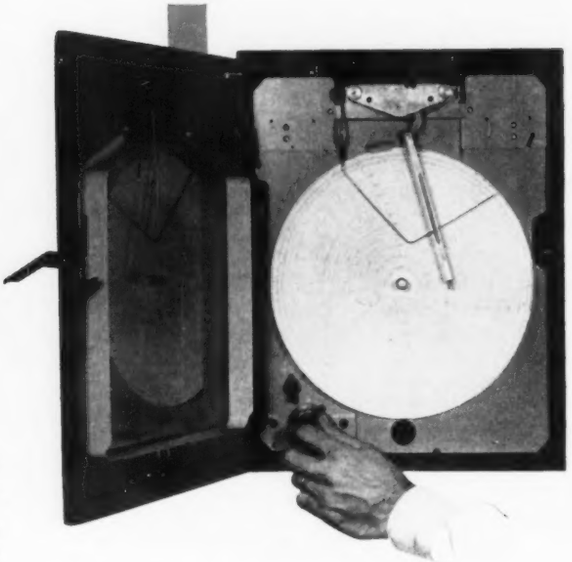
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NEW FLEXIBILITY IN OBSTRUCTIONLESS FLOWMETERING



The F & P Magnetic Flowmeter design lets you set any desired flow value *at full scale . . .* permits *utilization of the full receiver range.* Maximum flow can be set at any value from 1 foot per second to 30 feet per second . . . *at the turn of a dial!* This unique feature *is standard with every F & P Magnetic Flowmeter.* There's no extra charge, no complicated modifications.

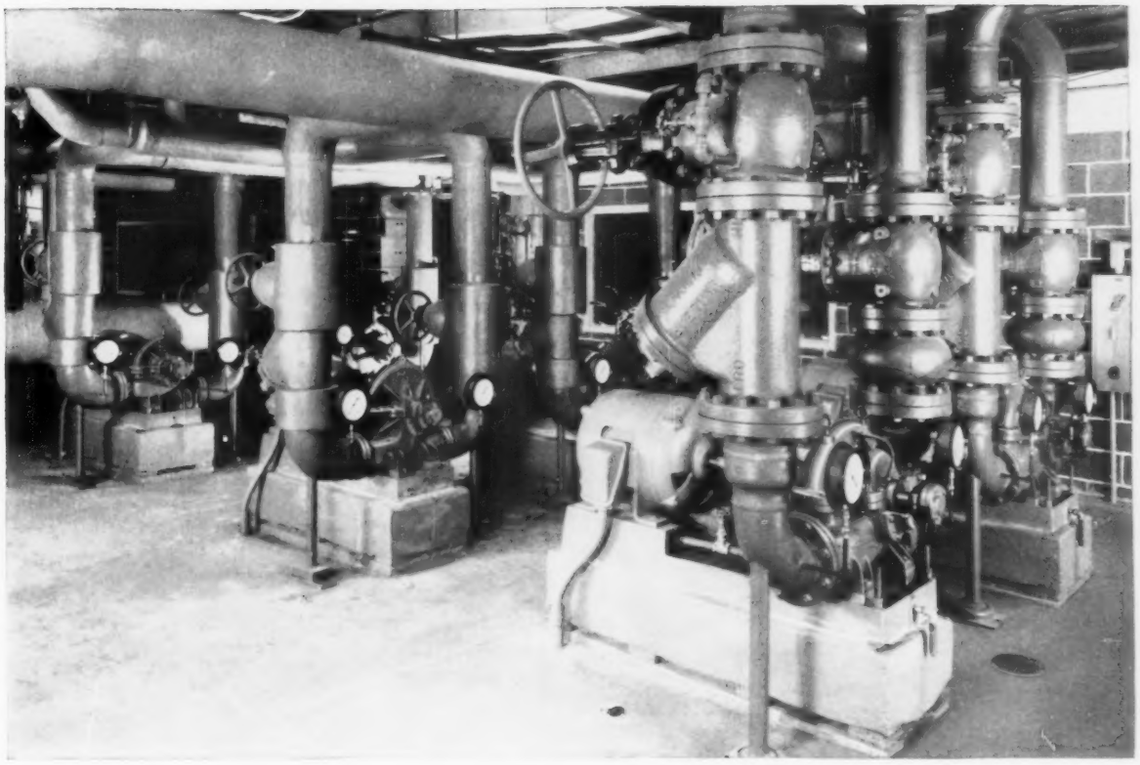
Available in pipe sizes from ½″ and up, these flowmeters—plus the new F & P potentiometer-type indicator/recorder—comprise a metering system which permits interchangeability of any primary with any indicator recorder. All types of standard secondary instrumentation—integration, control, retransmission—can be supplied in the recorder case.

You'll find that it's easy to substitute F & P Magnetic Flowmeters directly in existing flow-control or ratio-control systems. Get in touch with the F & P field engineer nearest you, and write for Catalog 10D1416. Fischer & Porter Company, 2148 County Line Road, Hatboro, Pa. In Canada, write Fischer & Porter (Canada) Ltd., 2700 Jane St., Toronto, Ont.

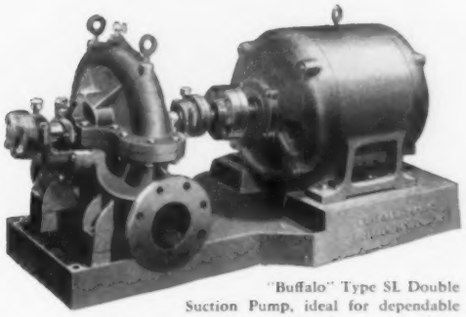
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"Buffalo" Type SL Double Suction Pump, ideal for dependable clear water service. Available in capacities from 10 to 14,000 GPM.

Few industries rely as heavily on pumps as the paper industry. For this reason, many paper mills in this country depend on Buffalo Pumps for high efficiency, low maintenance service. Combining 81 years experience with modern construction, Buffalo Pumps offer many advantages to the busy mill man.

For example, in clear and white water service, "Buffalo" Type SL Double Suction Pumps such as those shown above assure you this longer lifespan of reliable performance. Their smooth hydraulic balance and high efficiency are the result of ample water passages, expertly engineered impellers and overall rugged construction.

Profit by the low maintenance service you will enjoy by specifying "Buffalo" Pumps. Write for Bulletin 995 today!

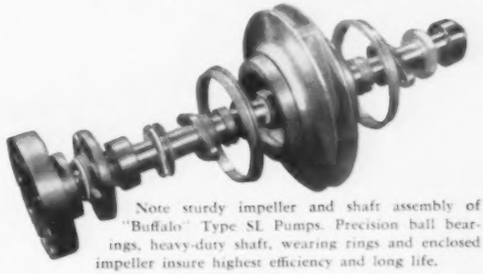
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Note sturdy impeller and shaft assembly of "Buffalo" Type SL Pumps. Precision ball bearings, heavy-duty shaft, wearing rings and enclosed impeller insure highest efficiency and long life.

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4 reasons why SONOCO DUROLENE paper mill cores out perform all others . . .



SONOCO Durolene paper mill cores deliver super-performance; are unequalled in torque strength, have ultra-high crushing strength and possess greater scuff resistance. Here are four reasons for these outstanding qualities—



RESEARCH is the basis for all SONOCO paper mill cores. Durolene strength is the result of this exhaustive research and product development.



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1403

If you require an economical paper mill core with exceptional strength, designed for long and efficient service — order SONOCO Durolene! SONOCO can also supply you with economical Duro returnable and non-returnable cores.

Both Durolene and Duro cores are made to your specification, with close outside tolerance. Standard sizes are available with famous BERMICO metal ends.

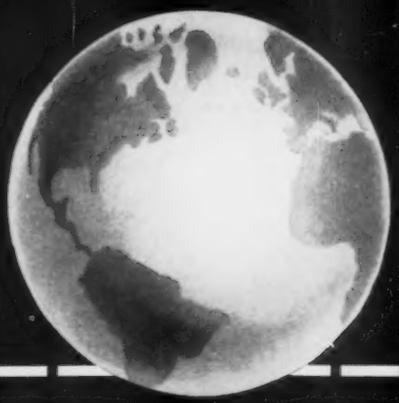
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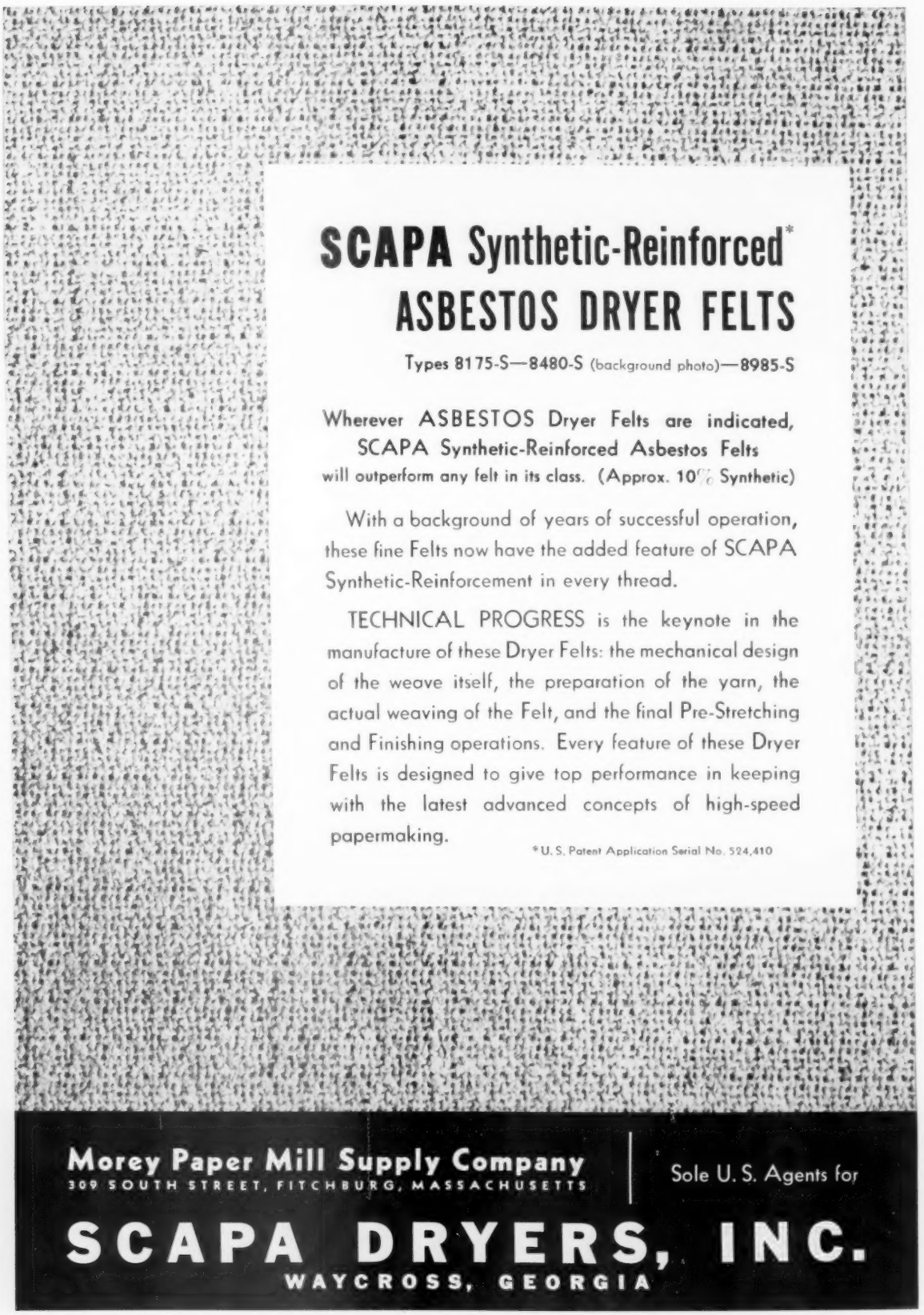
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SCAPA Synthetic-Reinforced* ASBESTOS DRYER FELTS

Types 8175-S—8480-S (background photo)—8985-S

Wherever ASBESTOS Dryer Felts are indicated, SCAPA Synthetic-Reinforced Asbestos Felts will outperform any felt in its class. (Approx. 10% Synthetic)

With a background of years of successful operation, these fine Felts now have the added feature of SCAPA Synthetic-Reinforcement in every thread.

TECHNICAL PROGRESS is the keynote in the manufacture of these Dryer Felts: the mechanical design of the weave itself, the preparation of the yarn, the actual weaving of the Felt, and the final Pre-Stretching and Finishing operations. Every feature of these Dryer Felts is designed to give top performance in keeping with the latest advanced concepts of high-speed papermaking.

*U. S. Patent Application Serial No. 524,410

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Increase stock preparation efficiency 7 ways

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2 Selectifier® Screen — removes foreign material, deflocks stock, improves formation. See Bulletin 18-SB.

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6 Disc Refiner — balanced flow, uniform refining at low HP/TON. Write for literature.

7 Jordan Fillings — Bulldog for longer life.

Descriptive Bulletins listed above are available upon request. Write to the Shartle Division Sales Department.

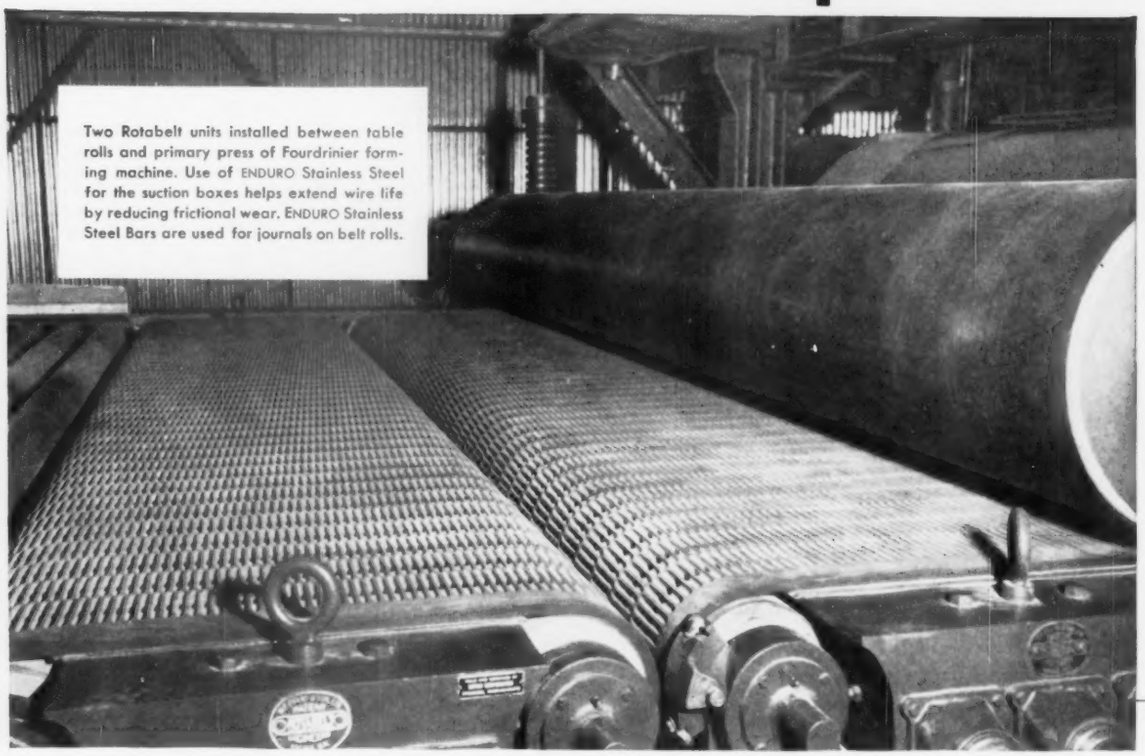
Ask your Shartle Sales Engineer to show you how to best apply the advantages of this equipment to your mill.

THE BLACK-CLAWSON COMPANY

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STAINLESS STEEL helps reduce

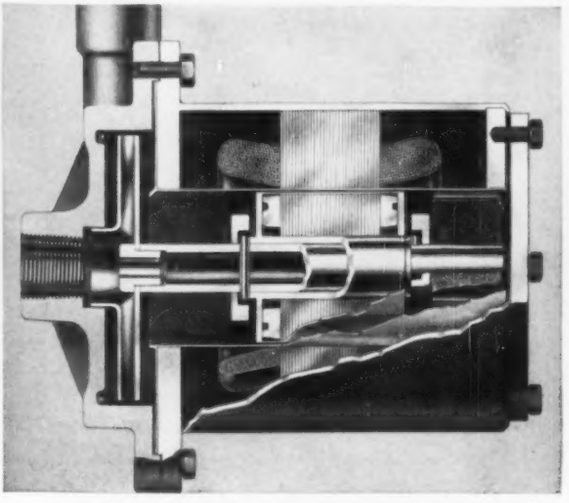


Two Rotabelt units installed between table rolls and primary press of Fourdrinier forming machine. Use of ENDURO Stainless Steel for the suction boxes helps extend wire life by reducing frictional wear. ENDURO Stainless Steel Bars are used for journals on belt rolls.

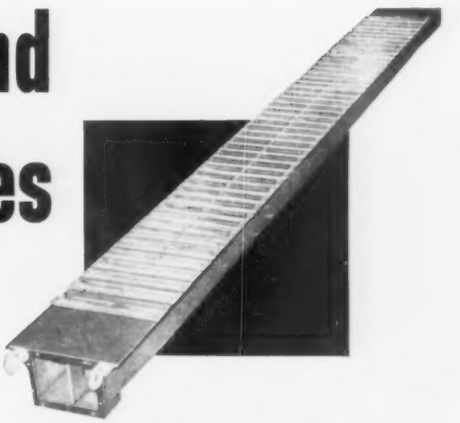


REPUBLIC SRK PLASTIC PIPE EXTENDS LIFE of piping installations by providing excellent corrosion-resistance. Controlled laboratory tests show Republic SRK (Semi-Rigid Kralastic) is satisfactory for Kraft, Black, Green, White and Sulfite Liquors—as well as Chloride Bleach and Alum. SRK requires no maintenance. Replacement costs due to corrosion are eliminated. Its extreme toughness shrugs off mechanical abuse. Republic SRK is lightweight, easy to carry. It is readily cut with a handsaw or hacksaw and is easy to join with brush applied solvent and sleeve-type fittings. Available in sizes ½″ through 6″ in a range of working pressures. Send coupon for complete details.

REPUBLIC TITANIUM CAN ADD YEARS TO EQUIPMENT LIFE. Maximum corrosion-resistance plus an exceptionally high strength-to-weight ratio are major reasons for its use in this seal-less, leak-proof centrifugal pump made by Chempump Corporation, Philadelphia, Pennsylvania. The pump handles such corrosive liquids as chlorine dioxide. All wetted parts are made from Titanium. Chempump's exclusive design makes it possible and *economical* to use Titanium for these vital parts. Mail coupon today for more facts on Republic Titanium.



frictional wear, extend life of Fourdrinier Wires



Stainless steel has proved again that it is the "must" metal for reducing maintenance and replacement costs, and for extending equipment life.

Proof comes from recent installations of Rotabelt units, rotary suction devices designed and built by W. P. Evans & Sons Company, Nashua, New Hampshire. The units were developed to replace stationary vacuum boxes on paper machines.

Fabricated from Republic ENDURO® Stainless Steel, the principal advantage of Rotabelt has been to increase wire life by reducing frictional wear. This is accomplished through design and construction features utilizing ENDURO's hard, smooth, snag-free surface and outstanding corrosion-resistance. One installation shows the average loss of caliper of the wire per day was reduced 42%, while in another installation wire life tripled.

ENDURO is solid stainless steel. There is no applied surface to crack, chip, flake or peel away. It offers the highest corrosion-resistance of any commercial metal currently being used for pulp and paper manufacture. It protects product purity and quality at every stage of production.

Strength, heat-resistance and cleanability are more advantages of ENDURO that you can be enjoying now. Your equipment supplier has all the facts. Or send us the coupon. Expert metallurgical service available without obligation.

This example of the advantages of stainless steel is brought to you by Republic Steel in behalf of the stainless steel equipment manufacturers and the Republic Stainless Steel distributors—your local steel service centers.



NEW, ECONOMICAL IDEA FOR PULP AND PAPER MILLS. It's BILD-A-FLEX, the new slotted construction angle designed and engineered by Republic's Berger Division. Three steps quickly and economically convert ideas into equipment, such as racks, benches, shop desks. Simply (1) plan your assembly, (2) cut BILD-A-FLEX, (3) join with bolts. Use it as "metal lumber". A unique pattern of short slots allows complete flexibility and assures sufficient bolts in bearing to give adequate joint strength. Ten angles per bundle, light or heavy gage, 10- or 12-foot lengths with hardware. Bonderized and finished with gray baked enamel. Send coupon for catalog.

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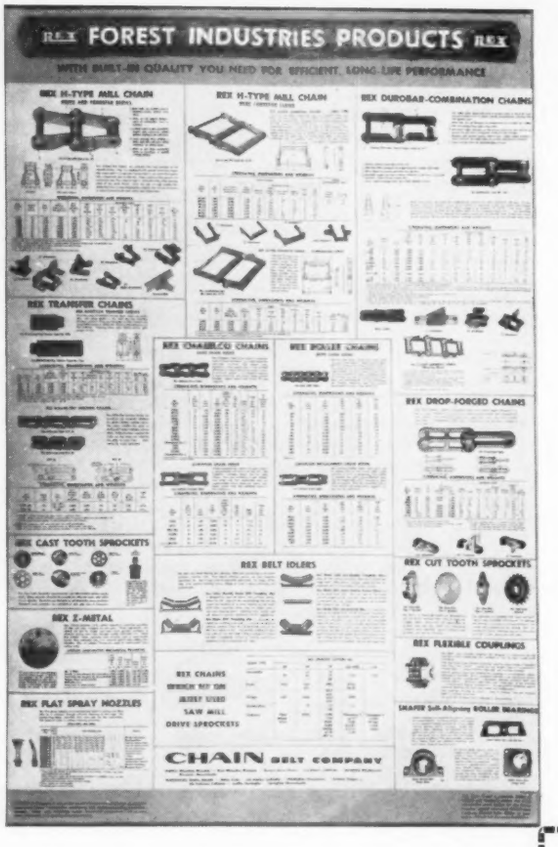
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☐ Have a stainless steel metallurgist call.
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Bulletin No. 57-54 is a real idea book, packed with interesting application photos...flow charts...chain and attachment data...idler and pulley specifications. It has been designed to help you...to stimulate your ideas on power drive and conveying installations.

The wall chart is your handy guide to chain and sprocket selection. Large illustrations...specifications ...a complete, easy-to-use chart that simplifies your work.

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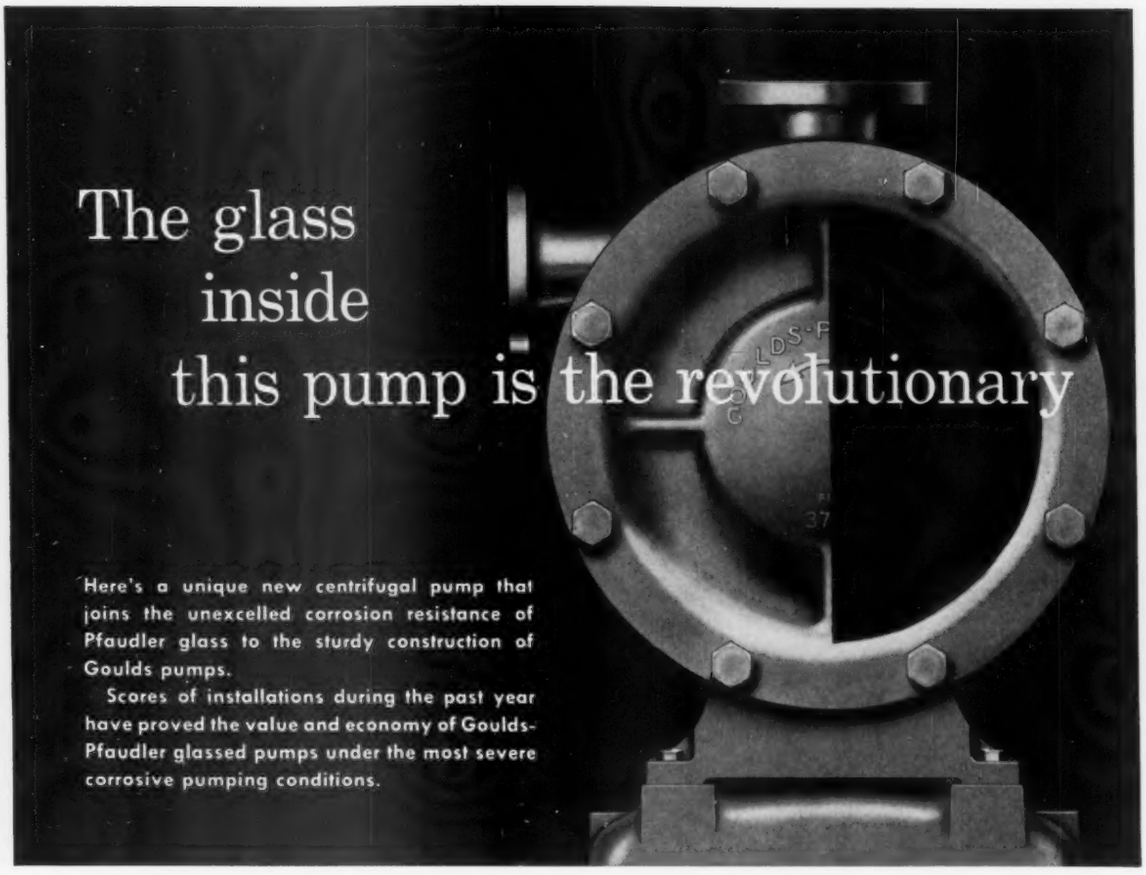
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There are 6 important reasons for calling this new pump revolutionary in its usefulness to anyone pumping corrosives.

1. Corrosion resistance. Every pump surface that touches the pumpage is glassed. The borosilicate glass formulated specifically for pump application does not depend upon a passivating film for protection. It therefore offers excellent corrosion resistance to all acids (except hydrofluoric) even at elevated temperatures to 350° F. and to alkalies at moderate temperatures.

This means long service—unmatched freedom from corrosion.

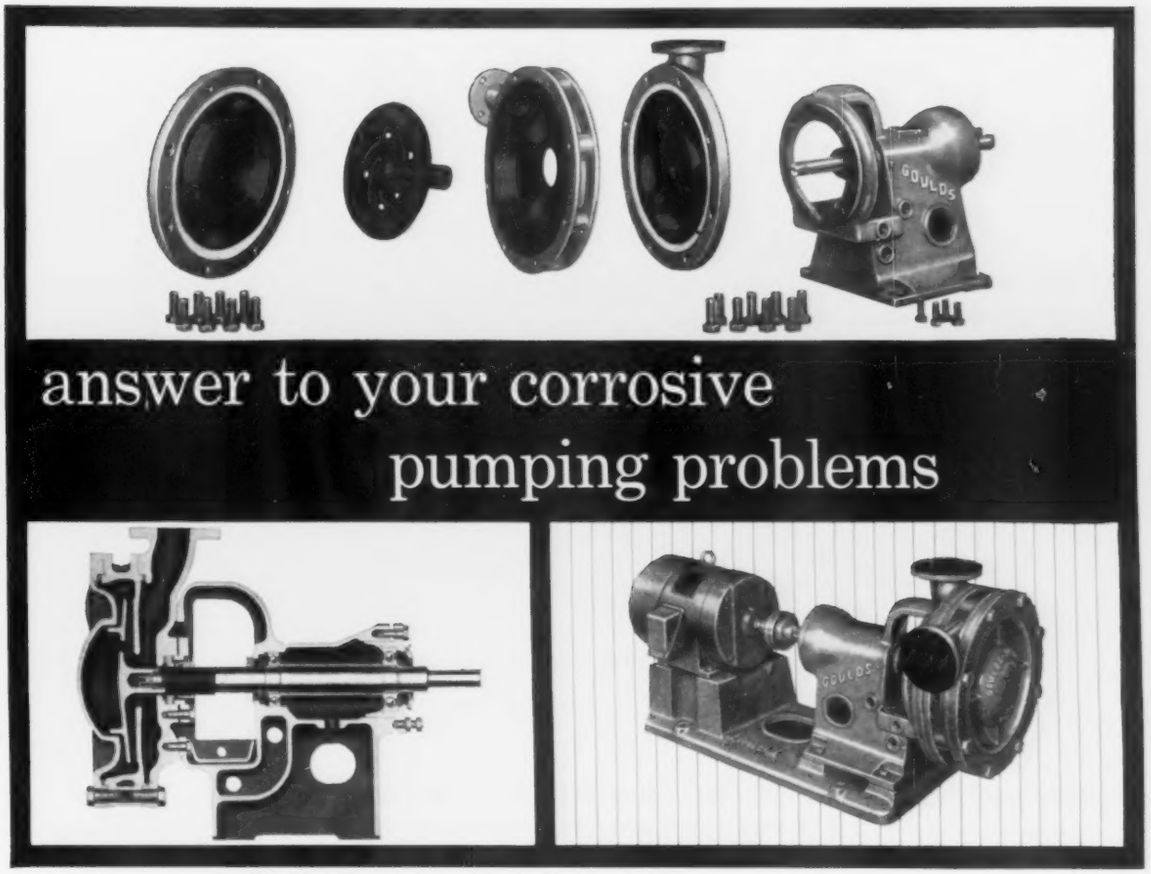
2. Elimination of stuffing box problems. The pump's unusual design places the stuffing box on the suction side of the impeller, subject to low suction pressure only. Inherently, this arrangement insures long packing or seal life and freedom from excessive leakage.

You can get this pump with any mechanical seal arrangement to handle not only clear corrosive liquids, but also abrasive slurries. It is also available with packed stuffing box.

3. Freedom from contamination. Since the glass used in this pump is completely inert, the pumpage cannot "pick up" metallic or other substances which might contaminate or catalyze your reactions. Smoother than the most highly polished metals, the glassed surfaces of the Goulds-Pfaudler pump discourage product adhesion and scale build-up.

4. Mechanical strength. Goulds-Pfaudler glassed pumps are strong and durable. High temperature firings fuse the special formula glass to the metal chemically and physically, providing a permanent

GOULDS-PFAUDLER
Glassed Pumps



glass-to-metal bond.

The resulting combination withstands sudden temperature changes within a range of 100° F. differential—and has the durability you expect from a conventional metal pump—plus remarkable resistance to corrosion.



5. Simple centrifugal design. The glassed pump is conventional in its hydraulic design. There are no special problems of specification, installation, or maintenance. The casing design allows internal inspection, impeller and mechanical seal removal without disturbing piping connections.

6. Economy. The comparatively low cost of glass and the economy of the Goulds-Pfaudler production method combine to make these pumps less expensive than others using special materials and methods to achieve any reasonable measure of resistance to corrosion.

The first cost of a Goulds-Pfaudler glassed pump is likely to be less than you expect. The *total* cost—considering improved pumping efficiency, longer pump life, and uncontaminated process—is almost certain to be lower than any you have known in the past.

Size . . . capacity . . . head. You can choose from four different sizes of the Goulds-Pfaudler glassed pumps, and get capacities up to 700 GPM . . . heads up to 140 ft. The pumps are available for export.

Use the coupon for a bulletin containing complete information, including performance curves.

GOULDS PUMPS, INC., Seneca Falls, N. Y.

Please send me Bulletin 725.2 on the new Goulds-Pfaudler Glassed Pump.



Name..... Title.....

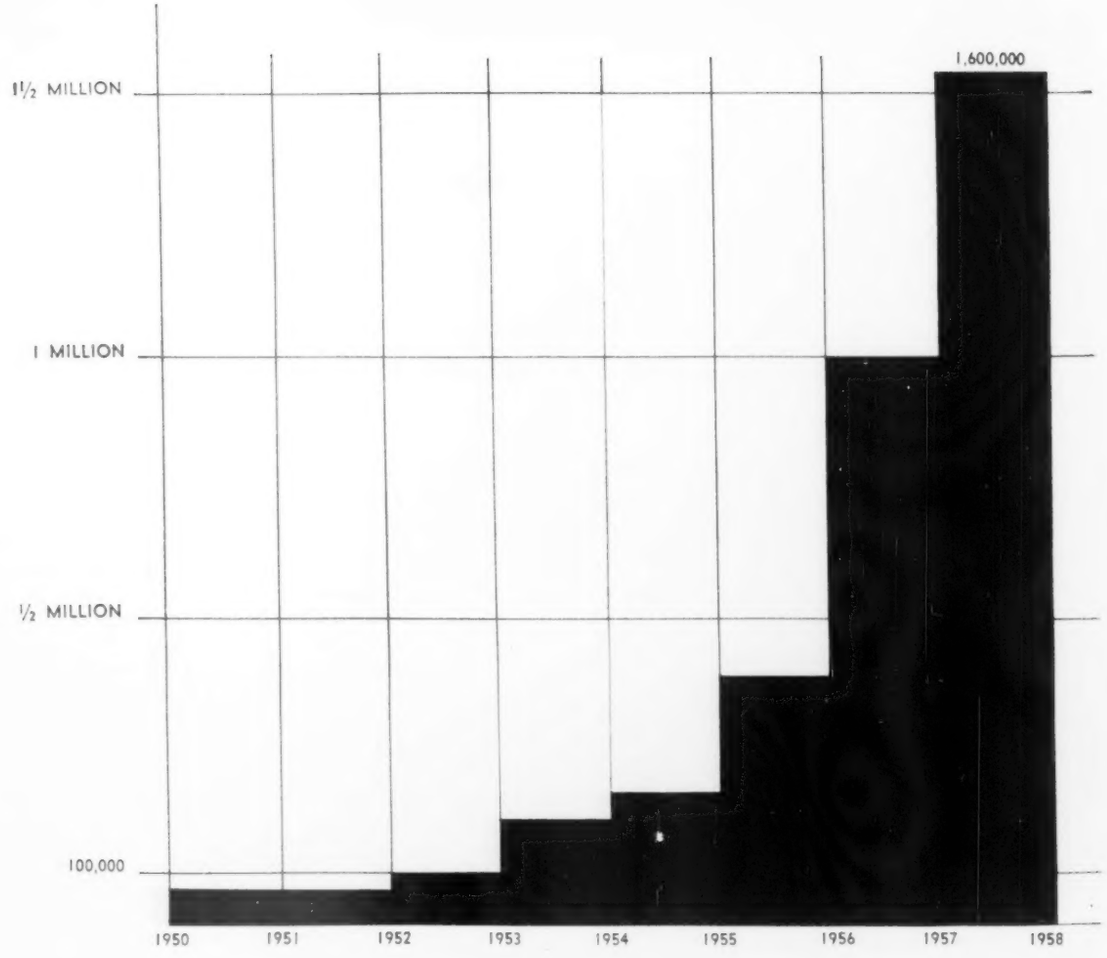
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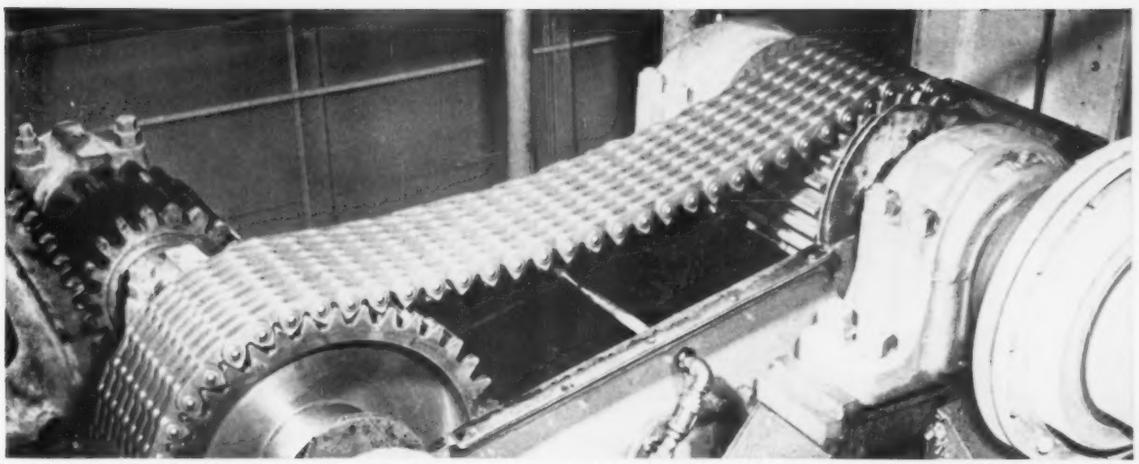
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continuous digesters



For Information Contact KAMYR INC. Hudson Falls, N. Y.

West Coast Representatives: A. H. Lundberg, Inc., Mercer Island, Wash.



HIGH SPEED. Traveling at speeds as high as 5000 fpm, silent chain drives readily accommodate the extreme peak loads without losing their better-than-98% efficiency.

How LINK-BELT silent chain drives survive industry's roughest requirements

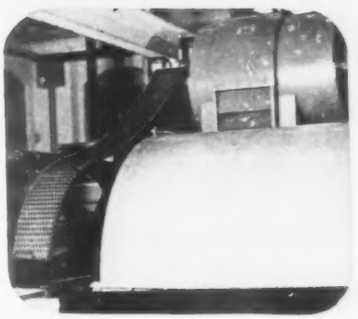
Would your drives do as well?

On applications like these and scores more, no other type of drive is the equal of Link-Belt silent chain. Ask your Link-Belt office or authorized stock-carrying distributor for comprehensive 88-page Book 2425.

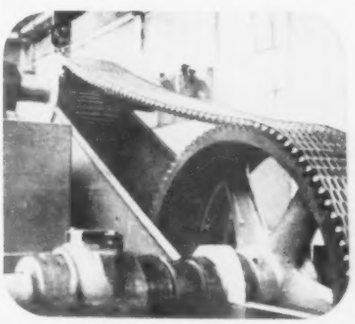
LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,679



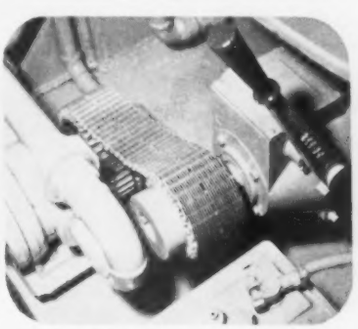
LARGE OR SMALL HP. On a 300 hp drive like this or at fractional hp, silent chain is always lower in ultimate cost.



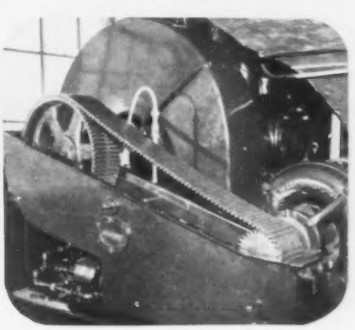
LARGE RATIOS. Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



ADVERSE OPERATING CONDITIONS. Heat, humidity and cold have little effect on Link-Belt silent chain drive performance.



LIMITED SPACE. Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



LONG LIFE. This drive is 16 years old and still going strong. Not unusual—many others have lasted twice that long.



But there's one thing they agree on...

YOU CAN DO IT BETTER with E.D. Jones

A flow-chart will get you an argument almost anywhere, any time, because different systems have their own partisans — even when the end product is the same. Maybe you wouldn't agree with either of these superintendents.

But on one point you'll find more and more agreement: whatever the system, Jones equipment belongs in it — for better performance, better sheet qualities and over-all operating efficiency and economy.

Only Jones offers a complete range of top-quality stock preparation machinery . . . pulpers, beaters, disc and conical refiners, screens. So you can always count on Jones for unbiased recommendations for any system — and top quality equipment to meet *your* requirements.

Ask your Jones man first...

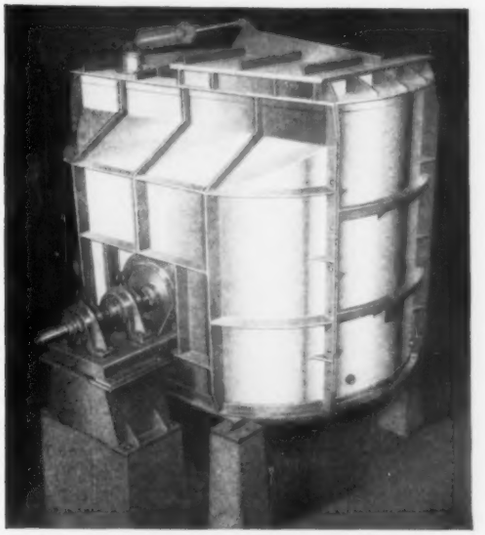
E. D. JONES & SONS COMPANY
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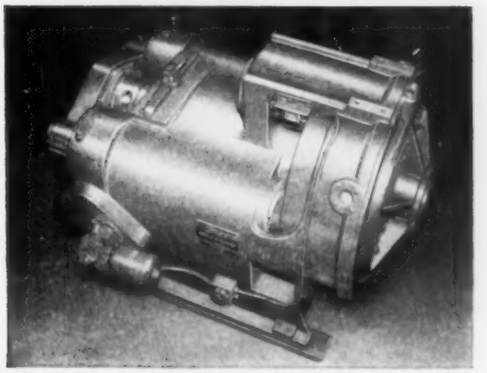
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E.D. Jones HI-LO PULPER



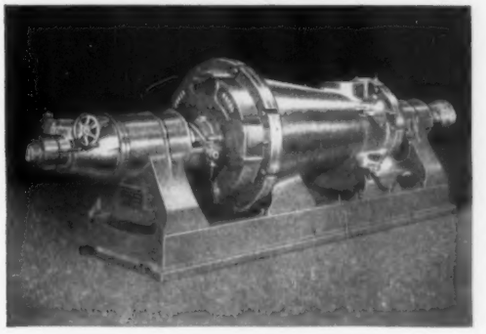
Engineered to eliminate the compromise imposed by conventional single-rotor pulpers between maximum circulation and complete defibering, the HI-LO employs two separately powered rotors to provide maximum pulping *and* complete defibering, with significant savings in time and power. For details, ask for Bulletin EDJ-1063.

E.D. Jones DOUBLE-D REFINER WITH EQUA-FLO



The only unit of its kind with *two stages of refining* in one machine, the Jones Double-D can actually do twice the work of conventional refiners because it has double the refining area — 2200 square inches in the 42" model; produces stock of equal or better quality at a considerable saving in operating cost. Ask for Bulletin EDJ-1083.

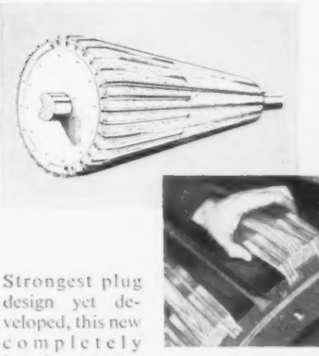
E.D. Jones ROYAL JORDAN



Like all Jones Jordans, the Royal incorporates exclusive Jones features developed in more than a century of service to paper mills. In addition, the Royal, a war-born unit developed originally to process nitrocellulose has some special features worth investigating. Ask your Jones representative or write for Bulletin EDJ-1007B.

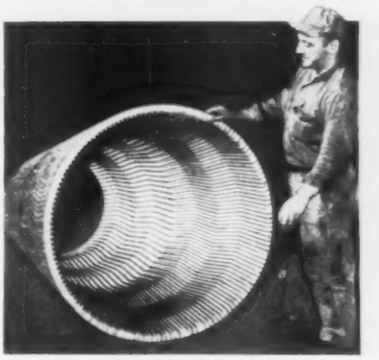
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E.D. Jones® Adapta-Plug



Strongest plug design yet developed, this new completely bandless Jordan plug is easiest to strip and fill. New, improved design holds bars firmly in place, eliminates hazards of slot wear and corrosion. Available in solid plug — or sleeve form for easy conversion of old worn plugs. Write for Bulletin EDJ-1094.

E.D. Jones® FULBAR SHELL FILLINGS



A complete one-piece assembly, made to fit the shell body of any Jordan. No keys or wedges. Fulbar rigidity and one-piece construction compensate for inequalities in old Jordan shells — save hours of installation time. Many other new advantages make this the ideal shell filling. Write for Bulletin EDJ-1094 and names of satisfied users.

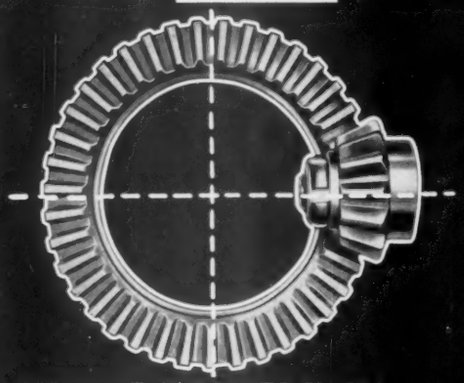
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Pittsfield, Massachusetts

Builders of Quality Stock Preparation Machinery

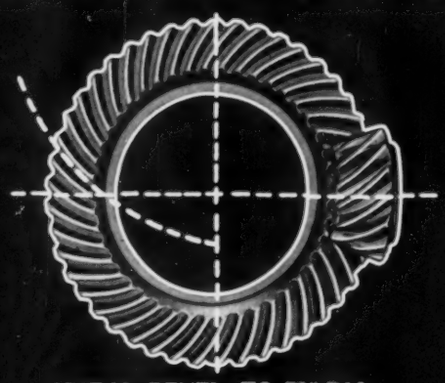
In Canada: The Alexander Fleck, Ltd., Ottawa

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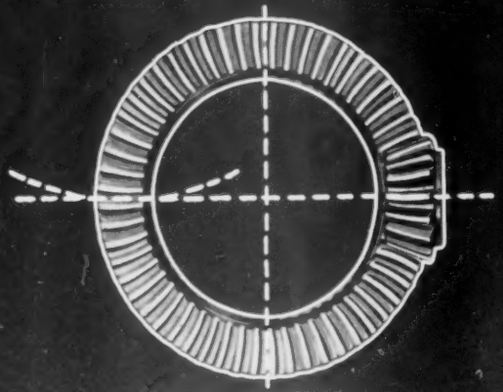
DO YOU KNOW YOUR BEVEL GEARS?



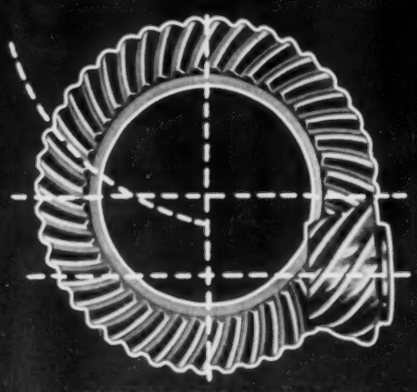
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SPIRAL BEVEL (TO 72" DIA.)



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NO TEST WEIGHTS NO TRIAL RUNS NO WILD ROTORS

RAYDYNE'S NEW "AUTOMIC" DYNAMIC MACHINE BALANCING

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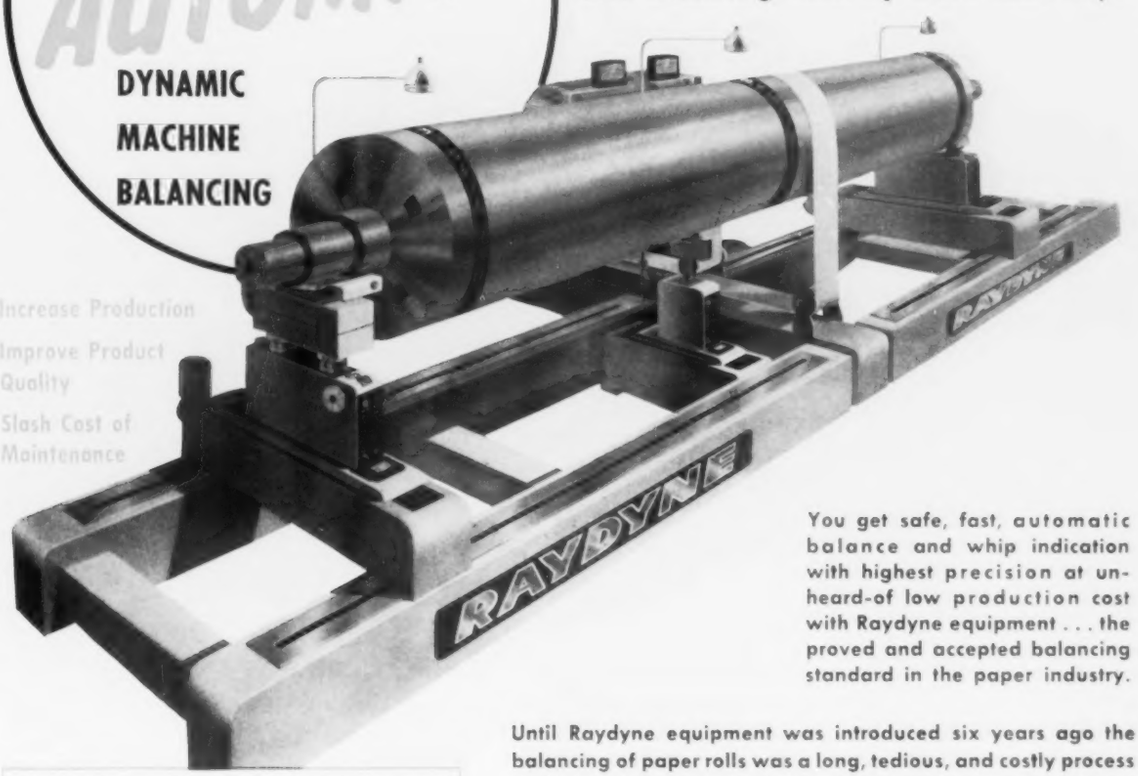
Whip indicated automatically

Cuts balancing costs by more than 75%

Increase Production

Improve Product Quality

Slash Cost of Maintenance



You get safe, fast, automatic balance and whip indication with highest precision at unheard-of low production cost with Raydyne equipment . . . the proved and accepted balancing standard in the paper industry.

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- Universal Vee-type bearings
- Wide range of operating speeds
- Operates on any floor surface—free from all extraneous vibrations
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Until Raydyne equipment was introduced six years ago the balancing of paper rolls was a long, tedious, and costly process of doubtful accuracy. Raydyne alone provided an economical and accurate means of locating and measuring unbalance and whip in paper rolls and other rotors, regardless of their size or operating speed. Raydyne's continuous development program now offers the "AUTOMIC" machine which sets new standards of speed and accuracy that no other equipment can match, continuing Raydyne's merited acceptance as the balancing standard in the paper industry. Join the growing ranks of satisfied Raydyne users by letting Raydyne solve your balancing problems. Write for complete details today.

Raydyne CORPORATION

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Bolton's BLUE DEVIL Knives save over $185.00 per day in chip production

. . . . . CUT SAWDUST IN HALF

In a large northern pulp mill* records comparing the performance of BOLTON'S NEW BLUE DEVIL HIGH SPEED KNIVES with those previously used show a net saving of over $185.00 a day.

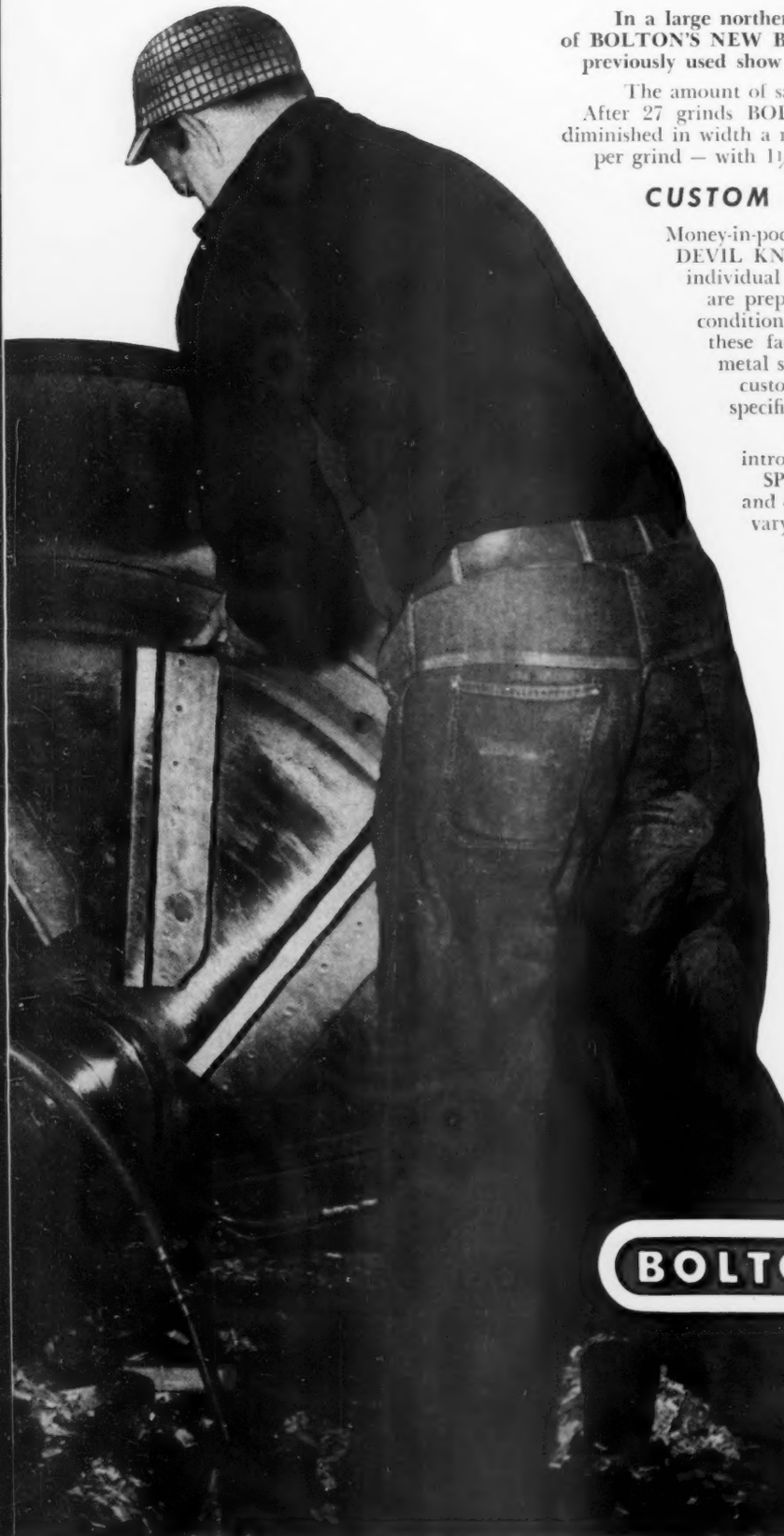
The amount of sawdust was *cut in half* — reduced from 4% to 2%. After 27 grinds BOLTON'S BLUE DEVIL HIGH SPEED KNIVES diminished in width a mere 3/8" — a hard-to-believe figure of .0138 inches per grind — with 1 1/8" of knife life remaining.

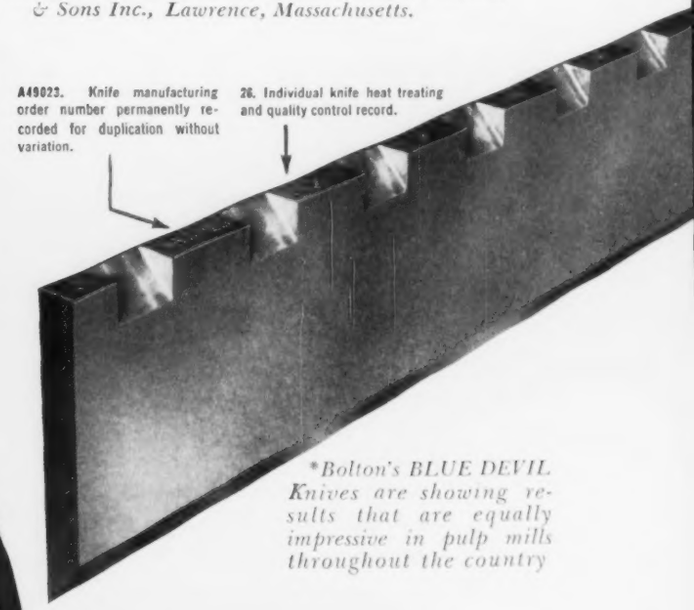
CUSTOM CRAFTING MAKES IT POSSIBLE

Money-in-pocket results like these are attained with BLUE DEVIL KNIVES because they are custom crafted to improve individual chipping operations. Manufacturing specifications are prepared *only* after a complete survey of the chipping conditions is made right in your wood room. Provided with these facts Bolton engineers and metallurgists determine metal selection, specific heat treating techniques and other custom processing steps — carefully calculated to fulfill specific chipping requirements and objectives.

A new concept in chipper knife manufacturing is introduced through BOLTON'S BLUE DEVIL HIGH SPEED KNIVES. Users are discovering new efficiency and dollar savings on a wide variety of pulp wood under varying wood room conditions. Custom crafted BLUE DEVIL KNIVES can accomplish the same for you.

How recently has your chipping operation been reviewed? For more information on Bolton's BLUE DEVIL KNIVES, contact *John W. Bolton & Sons Inc., Lawrence, Massachusetts.*

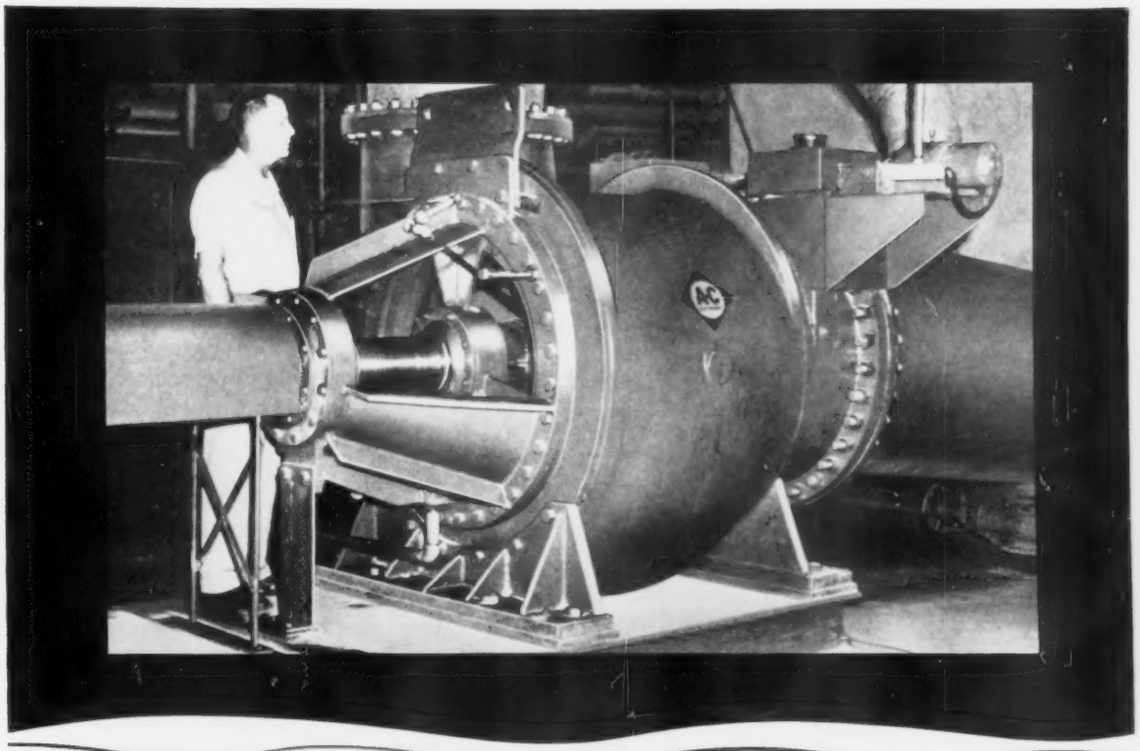




Bolton's BLUE DEVIL Knives are showing results that are equally impressive in pulp mills throughout the country

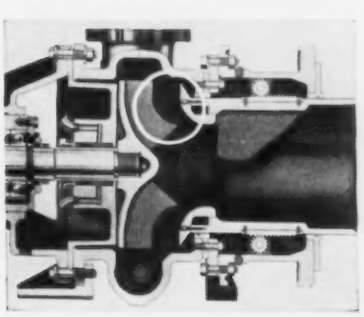
BOLTON EMERSON

ADE MARK



For fan service . . .

ACAP pumps for better blending than conventional valve control



Adjustable cylinder of ACAP pump may be moved toward or away from impeller for best blending of white water and make-up stock. Fully open position of cylinder, shown by circle, permits maximum blending.

When return white water and make-up stock are mixed by the cylinder of an *ACAP* pump, the extreme turbulence developed results in a blend that cannot be equalled by valve control.

In addition to superior blending, the *ACAP* pump also has the following advantages when applied for fan service:

- Saving in power at lower quantities.
- Ease of control: manual, remote pushbutton, or automatic.
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- No addition to total head to compensate for valve loss.

A complete line of *ACAP* pumps is available for fan service. Contact your A-C representative, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wis.

ACAP is an Allis-Chalmers trademark.

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ALLIS-CHALMERS



Why does practically every paper and board machine built in recent years have a Fulton Dryer Drainage System on the dryer section?

Why do paper machine builders rate Fulton Systems standard equipment on their new machines?

Why do machine builders urge operators of older machines, regardless of age or size, to install Fulton equipment?

Fulton Drainage equipment on your dryer gives you properly graduated temperatures under automatic control, hence lower steam input but faster drying and less shrinkage, cockling, curling hardening and less broke—far less broke!



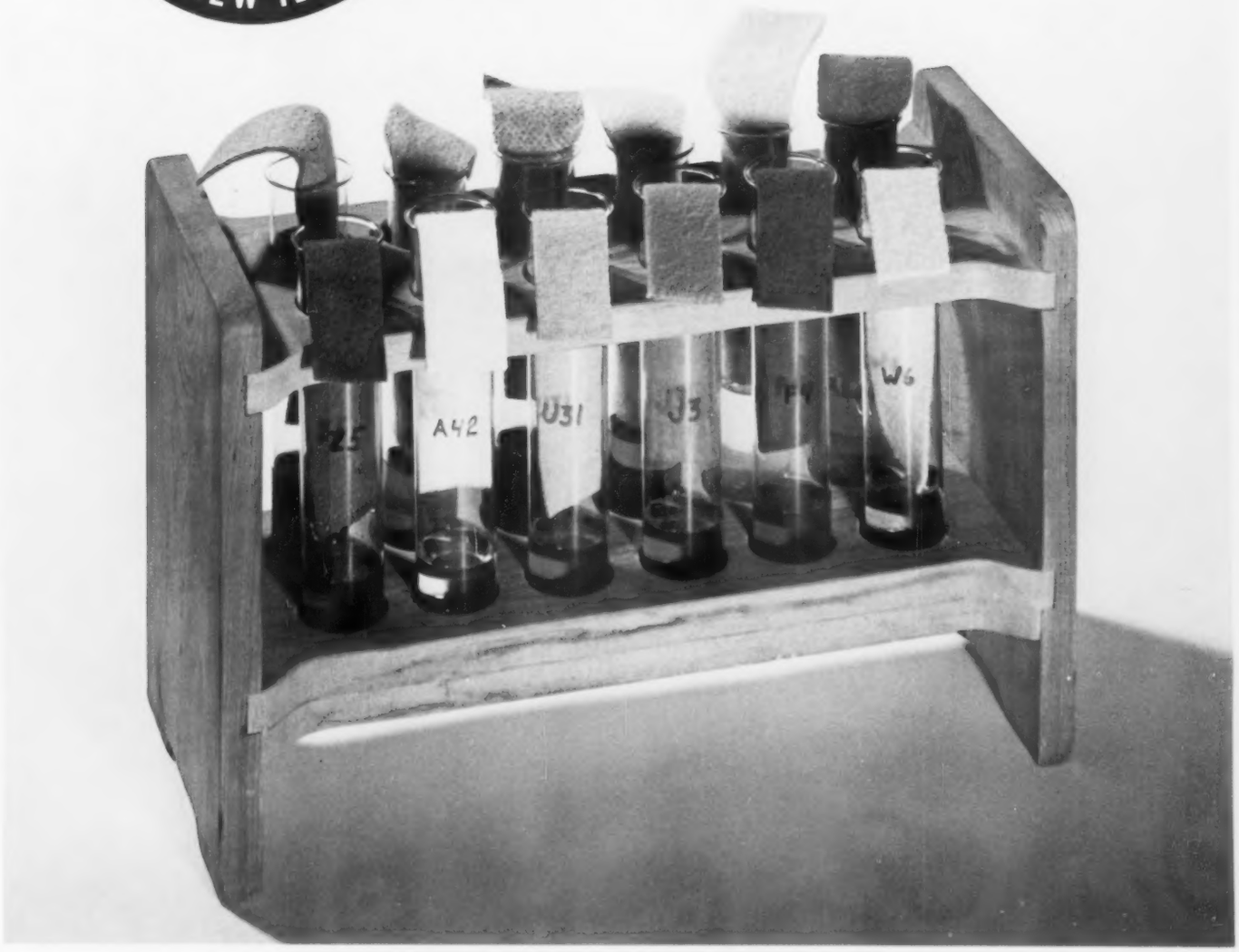
have us make a *technical* survey, then do some hard *thinking*

ROSS MIDWEST FULTON CORP., DAYTON, OHIO — U.S.A.

Subsidiary of J. O Ross Engineering—Division of Midland-Ross Corporation

Representatives: James Brinkley, Seattle; Clark & Vicario, North Tarrytown, N. Y.; Ross Engineering of Canada Limited, Montreal — Fredericton — Toronto — Port Arthur — Vancouver

ALBANY'S NEW IDEAS for better papermaking



WHAT CHEMICAL TREATMENTS MEAN

Chemical treatments for paper machine felts, like the design of the felt itself, must be evolved for a specific task. For this reason, Albany research laboratories have carried on a continuous program of development of new treatments to improve felt performance. Today, Albany offers more than 20 specific-purpose treatments to papermakers, including those which inhibit bacterial growth; give resistance to wear and stretch; keep the felt soft and open; improve starting and wetting; help prevent chemical and alkaline damage; and many others. Of particular importance to the papermaker are the new colorless treatments recently developed by the Albany Felt research laboratory. These should prove to be of great advantage to those mills running critical grades where colored fibers might be noticeable. Our goal, as always, is to help you produce more saleable tons per day!

AF

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"THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS"



The lighter side of paper . . . when it's a matter of whiteness, brightness and opacity . . . is best provided by TITANOX* titanium dioxide white pigments: number one choice in white pigments among paper makers.

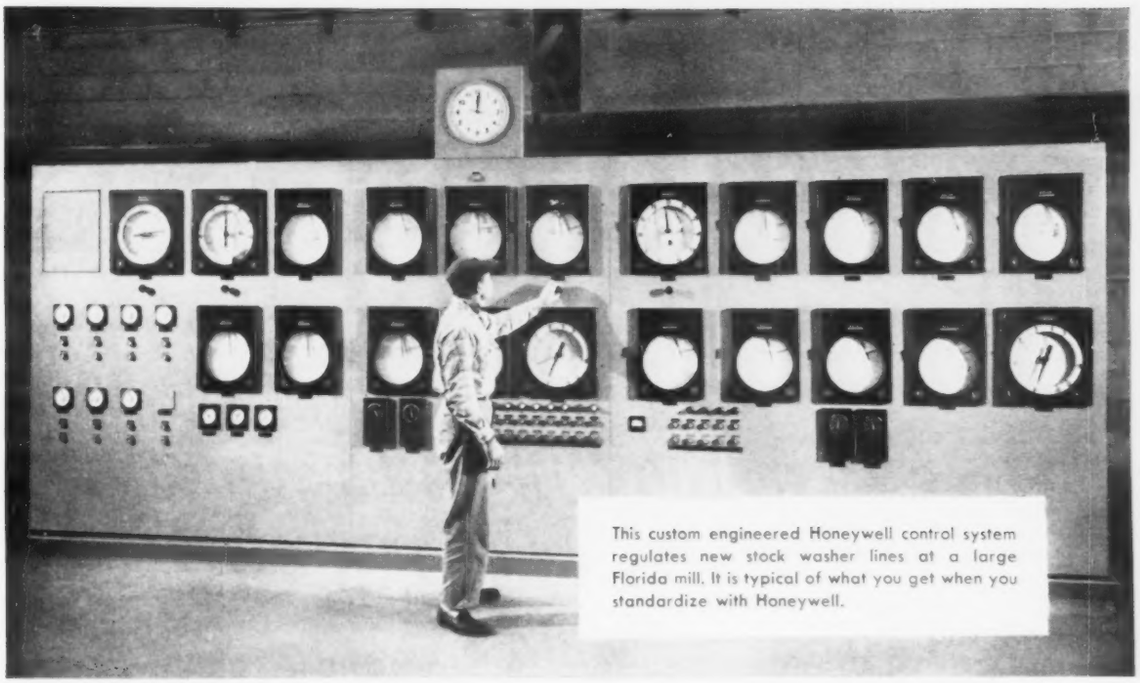
Regardless of paper product—from bible paper to building board; regardless of purpose—from brand identification in food wrappers to easy legibility in printing papers . . . there's a TITANOX pigment for best results: TITANOX-AWD, TITANOX-C-50, or TITANOX-RA-50. In addition, TITANOX pigments will lighten the burden of processing, through their ease of dispersion and uniformity of all properties. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities.

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Subsidiary of **NATIONAL LEAD COMPANY**

*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation.



This custom engineered Honeywell control system regulates new stock washer lines at a large Florida mill. It is typical of what you get when you standardize with Honeywell.

Get the most for your money... complete mill instrumentation by Honeywell

It's poor economy to buy instruments piecemeal from different sources. Honeywell complete mill instrumentation—fitted exactly to the requirements of your organization—is a far simpler, less expensive approach to your process control problems.

Let Honeywell custom-design, build, install, and service instrumentation for your *entire* mill. Honeywell will assume full responsibility for the job, from preliminary planning through startup.

You gain many advantages when your instrumentation comes from this one, dependable source. Purchasing is simplified. Spare parts inventory is reduced. System components are easily adapted to changing process requirements. Maintenance is easier. And you're backed by the world's largest instrument service organization.

Your nearby Honeywell field engineer will be glad to discuss your control requirements. Call him today . . . he is as near as your phone.

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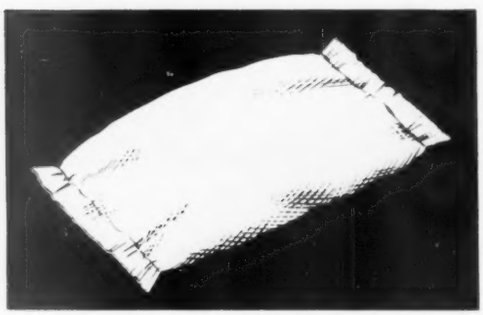
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The Problem Facing Scientists

Scientists and technicians must operate in three social phenomena—which have both drawbacks and advantages:

1. Group activity. 2. A free society. 3. Age of specialization.

Mr. Swanson tells scientists they must avoid the pitfalls, take advantage of good features.

The Problem Facing Industry

The paper industry is in danger of becoming defensive and too complacent. When that happens, warns Mr. Swanson, it will lose out to competing industries.

He cites specific fields in which group research, if carried on intelligently, could be of immense benefit to this industry and this country.

Guide to Improve Research . . .

This industry may be at dangerous stage as it must face tougher and sharper competition from other industries

By WALTER H. SWANSON
Vice President of Research and Development, Kimberly-Clark Corp.

Principal excerpts from his acceptance of 1958 TAPPI Gold Medal

• The problems confronting 20th century scientists and industry involve three environments in which scientists must work:

(1) His role in an increasingly group-oriented culture;

(2) His role in a free society;

(3) His role in a society which seems to demand greater and greater specialization.

The trend toward group activity and group effort is one of the sociological phenomena of our time. The reasons for this state of affairs are complex and many. People in industry, in government, in schools, in the professions, have become infatuated with groupism. We have teams, task forces, committees, councils, boards, staffs.

Groups Both Good and Bad

There are inherent in this trend both wholesome and unwholesome ingredients. Where a group is involved in constructive, creative work, the members may find a lively environment of mutual stimulation. By pooling experiences, the group can assimilate and use broader fields of knowledge. Where composed of strong, dynamic, and understanding individuals, there may be generated a highly constructive "oneness." The total can be greater than the sum of its parts.

On the other hand, the group may be a haven for the irresponsible. An individual without courage can acquire anonymity in a group setting, and find comfort in knowing that he can blame his shortcomings on the group. There is the ever-present danger of the group exerting pressure on the individual to conform.

Many individuals find security in conformity; but in the process find that the loss of their individuality, their inventiveness, and the things that make them unique are prices they pay for such security. The ingenious ideas of one person can be emasculated or drained of their true worth as each of the other members seeks to have a piece of his own thinking injected into the final product. Mediocrity is often the result.

What has this to do with the scientist in 1958? A great deal. He would be well advised to understand these forces. He must accept the fact that intelligent concerted action can be more fruitful than individual action, but beware of paying the price of his individuality for the security afforded by the group. He must at all cost retain his individuality of viewpoint, his non-conforming curiosity, and his willingness to venture scientifically. In such unique attributes the potential for his greatest contribution lies.

Scientists in a Free Society

Related to this is the role of the modern scientist in a free society. Psychologists inform us that those who function in an environment of freedom must pay a price. This price is insecurity. To be free is to be relatively undirected by external forces. This lack of direction, fortunately, makes men rely on their own ingenuity, but raises their level of anxiety. They are "under the gun," so to speak. There is no father-protector to tell them what to do.

These feelings of anxiety can have a variety of effects. They can be crippling, can reduce the anxiety-ridden person or group to indecisiveness, inactivity, inefficiency. On the other hand, anxiety, on a much lower level, can be the irritating spur to accomplishment.

Psychologists tell us that faith is an effective antidote to high levels of anxiety—faith in ourselves, our associates, our industry, in the free society in which we're privileged to live. And, at the highest level, faith in God. Faith, that is, accompanied by constructive action.

What has this to do with present day scientist? One answer may be that we have to understand the workings of freedom, to appreciate the ob-

ligations it entails. Being aware of the insecurity and anxieties which it is certain to generate, let's face such forces squarely, conquer them with faith and hard work. Let's put our anxieties to work for us. Let's not panic and look for the pseudo-comfort of associates. When we work together, let's do it for the right reasons: to broaden our sights, to assimilate and use wider areas of knowledge, and use group energies which exceed those of individuals working alone.

What Specialization Means

Now consider the third force: the effect of the age of intense specialization. This is as it should be. For as the body of man's knowledge increases, he must group and classify what he has learned. The groups and classifications have become so mountainous that we can't, as individuals, comprehend the total, and we must confine our attentions to something more narrow.

But we would be short-sighted if we did not recognize the pitfalls of specialization. It is a simple matter to become so involved in the pursuit of a specialty that vast realms of useful knowledge pass us by. We become experts wearing blinders, unaware that in related fields tremendously significant things may be in the process of being unearthed.

To constrict our vision in this manner is to defeat the very purpose of specializing. We specialize in order to gain knowledge of a particular field, and to relate that knowledge to other knowledge. It is principally through intelligent relation of facts and knowledge that progress is made. But we can't relate to, what we're ignorant of (if I may dangle some prepositions before you.)

Related to Pulp and Paper

Industries, like individuals or complete civilizations, thrive and prosper if they meet the challenges which confront them; and they sicken and die if they fail. An industry on the rise is aggressive, acquisitive, on the offensive, dynamic, inventive. An industry on the decline, or about to start a decline is defensive, protective, static, and generally unimaginative.

Sometimes I wonder if the paper industry isn't, by its very nature, in danger of becoming defensive. For many years we have faced no threat of absolescence. We are one of the few industries which has a replenishable basic raw material, and it's still one of the cheapest. Our products are largely disposable; our customers keep coming back for more. These facts, if we let them, could permit us to become complacent, to sit pat and wait for population increases to assure that pleasant ascending curve on a sales graph.

To meet this expanded demand, we have increased our productive facilities at a breath-taking pace in recent years. But isn't it a little sad that each new mill is, to a great extent, a duplicate of one already in existence? There are, of course, many improvements in design and performance, but they are mostly within a framework or pattern which has existed for many decades. In this industry, the hold of the past on the present and future is very great. Must it always be that way?

I wonder if we papermakers do not play too much of a waiting game, assuming a holding position, not squarely meeting the challenges which face us.

All of us can see inroads being made on this industry by the chemical industry, in the form of plastic products. Polyethylene bags are commonplace and are replacing certain paper bags and containers. Plastic sound tapes could conceivably replace books. Today we can listen to the Encyclopedia Brittanica, rather than read it. Many books and periodicals are being microfilmed instead of being reproduced on paper. We all know that the chemical companies produce cellophane.

Aluminum foil is gaining increasingly wide acceptance for wrapping and storage purposes. The paint roller and latex base paints have made a lot of people change their minds about wallpaper. Is it not possible that new communications media will make newspapers obsolete? What about the impact of TV (and particularly color TV) on much of the advertising now being done on paper?

Although paper has replaced many other materials in recent times, it is surely within the realm of reason to speculate that something may replace paper. Fabricators of synthetic fibers could conceivably come up with something cheaper, better, and stronger than cellulose fibers, causing no small degree of consternation among pulp producers. I don't look for this to happen tomorrow or next week; but in the years ahead, who knows?

Pool Efforts to Get Basic Truths

What can we do, not only to try to assure ourselves of the healthy continuity of our industry, but to set an example for all of American industry?

First, how can we work in a group-oriented society without suffering its evil effects? In this industry as a whole we can recognize that our greatest competitors are not each other, but other industries; and, to an even greater extent, our principal competitor is our own ignorance.

We can pool our dollars and cooperate with each other in the acquisition of knowledge, particularly in the area of basic research. Our type of operation is not so profitable as to permit each company to spend agonizing years uncovering basic scientific truths. Further, there is a point at which duplication of research efforts is an inexcusable waste of time, money, and manpower. We speak of duplication of effort in the government, but forget that we might be guilty of the same offense.

The mutual stimulation, the pooling of knowledge and information, and the added energy of the group entity can be vital forces in creating or developing the new insights that are necessary to making "breakthroughs" on the scientific and technological fronts of an industry. Should we not cooperate in acquiring basic knowledge but compete in making use of it?

Those who undertake concerted effort should do so for the right reasons. If we form groups simply for the purpose of being defensive, we waste our time. If the groups, when formed, try to mold the members into a pattern of conformity, priceless individuality is lost.

Group Research Is Desirable

The areas in which group effort can be applied to basic research are many. For instance, what do we really understand of tree chemistry, of photosynthesis, of the processes of formation of cellulose, lignin and other wood constituents?

Are there not vast unknowns in the subject of tree genetics? What makes fibers bond together? What mysteries are yet to be uncovered about cellulose, hemicellulose, lignin, etc.?

What can be yet discovered about water environment? Is it necessary to use such tremendous quantities of water to make paper? How can we structure cellulose fibers to form a sheet more simply, more economically?

Wouldn't it be nice if we could more fully understand the tree as a vast storehouse of energy and raw materials? How can we approach full utilization of the tree? Can we grow fibers faster in media other than the tree or other plant forms?

There may be a person somewhere who is genius enough to solve these problems. But until he is found, I see no better approach to them than through intelligent and dedicated group effort. The many intra-industry groups already functioning are good

beginnings but we should do better and do more.

The uses to which the results of basic research can be put by individual companies is limited only by the imagination of their personnel. They must be implemented, new and improved products developed, new processes evolved. And this must be done within our companies.

But the fruits of common exploration and discovery in the area of basic research can be of immense benefit to the entire industry, and to all consumers of paper products. We could become a creative force which would be emulated, even envied, by other industries. If many of our industries were to follow such patterns, there would soon be little talk of the United States becoming a second rate power.

Research Must Be in Free Society

It is vital that groups, involved in the type of basic research described here, operate in and understand the climate of freedom. They must appreciate beforehand the insecurity they will experience, and the concomitant feelings of anxiety. When freely venturing beyond the known and the understood, anxiety levels rise. These forces should be put to work for us. It takes courage to dare to be different, to go out on a limb. It takes genuine faith to persevere and endure the often long period of waiting before reward is realized.

Cooperative research efforts do not mean that the need for specialists will diminish. We are going to need more and better specialists. I do not have reference to compartmentalized technicians—those who isolate themselves. Physicists, chemists, all types of engineers, medical people, archeologists, botanists, zoologists, entymologists, anthropologists, psychologists, and many social scientists have enormous storehouses of information which we can put to work.

TAPPI, by its very nature, contains both the organizational structure and the individual talent to institute such an activity, if it so chooses.

Must be Open-Minded

In our combined or joint research efforts within the industry, there must be genuine open-mindedness. We have a compelling obligation to communicate that type of knowledge which will be of mutual benefit. So many discoveries have been lost because men have been loathe to disclose their findings, or because people have been unwilling to accept and try that which is new and different.

Many of Archimedes' principles had to be rediscovered centuries after they were first enunciated. Eratosthenes measured the dimensions of the earth almost 2200 years ago with amazing accuracy. Yet men either knew nothing about it or blindly failed to use such information until hundreds of years later.

The human race may have wasted millenia for lack of openmindedness or poor communications. There is neither time nor place for such lack of vision in our industry, or in any other industry.

As an eminent scientist recently said, "there are no limitations imposed upon man except those that he imposes on himself."

Inventor of Many Processes Wins TAPPI Medal

Approval was widely and emphatically expressed by many at Paper Week of the 1958 TAPPI Gold Medal award to Walter Hobart Swanson, vice president of research and development, Kimberly-Clark Corp. "Long-deserved" and "well-deserved" were the expressions of many.

Few men in the industry have figured prominently in so many new processing developments and inventions. He was inventor of the sulfite industry's forced circulation and indirect heating system in 1939, which resulted in greater cooking uniformity and condensate recovery through improved heat exchange.

A substantial list of other achievements for which he was primarily responsible, include:

Automatic pressure and temperature time cycle controls, first of the kind in this industry.

An independent reclaimed gas recovery system.

Direct spray cooling of sulfur dioxide burner gas, using primary and secondary cooling towers.

A cooperative development with The Institute of Paper Chemistry of spray burning of sulfur.

Invention of a mechanical chip distributor with forced circulation, for sulfite digesters primarily.

He and R. N. Miller were co-authors of the widely recognized authoritative book, *The Chemistry of the Sulfite Process*.

Born in Paxton, Ill., Oct. 10, 1896, he obtained his b.s. degree at Minnesota and his master's in forest by-products at Wisconsin, the latter being given in absentia while he was serving with the 75th artillery in France in 1918. He came out a first sergeant. Out of the army, he spent a year with General Motors, then joined the staff at the U.S. Forest Products Laboratory, Madison, Wis., leaving there as senior technologist to join Champion Paper & Fibre Co. as assistant to Dr. Schultz in the Canton, N.C., technical dept.

Mr. Swanson joined Kimberly-Clark's research dept. on Mar. 3, 1927, working the first few months in the Kimberly, Wis., mill, but ever since then his base has been Neenah, Wis., company headquarters. Successively, he became technical staff supt. of sulfite mills, staff supt. of sulfite mills, staff supt. of all pulp and chemical operations, director of manufacturing, asst. vice pres. and director of research and development, and—in 1953—vice pres. in charge of research and development. He is also a director of Coosa River Newsprint Co.

Dr. Roy P. Whitney, dean of The Institute of Paper Chemistry, made the Gold Medal award to Mr. Swanson at the TAPPI annual luncheon.



TYPICAL AT-WORK VIEW of Medal Winner Swanson.



Water, Water Everywhere—BUT . . .

U. S. Water Problem Grows

and it's time this industry spoke up. For it conserves and produces seven times as much as it uses. It has been too defensive

By JOHN G. STRANGE*

President, The Institute of Paper Chemistry

● The pulp and paper industry is doing a relatively good job on technical phases of water but that we have not participated in a sufficiently active or adequate manner in country-wide discussions and debates on the broad sociological, economic and political issues of water use and conservation. We have been too silent or too defensive in our position. This is distressing for at least two reasons: 1, because water is absolutely critical to our industry welfare, and, 2, because we are in an unusual, if not unique, position to contribute to sound policies.

In a broad sense, the amount of water in our world is a stable quantity. We can change its position and availability in given locations, and we can affect its form and quality temporarily, but there is nothing that we can do to expand or decrease total supply. It is generally agreed we have an average precipitation of approximately 30 inches per year in the United States. This will vary from a few inches in arid regions to as much as 160 inches in the Olympic Peninsula. It is further agreed that approximately 70% (23 inches) goes rather promptly back into the atmosphere through evaporation and the breathing of moisture from vegetation. The remaining 8 or 9 inches finds its way into streams and ultimately runs into oceans or soaks into the ground to feed vast reservoirs constantly percolating and moving under our feet. Water for agricultural, industrial and municipal purposes comes principally from this 8 or 9 inches which amounts to roughly 1,200 billion gals. per day, about six times the volume we use.

Still—It is in Short Supply

This generalized picture tends to bury in the shallow grave of averages the fact that water is in critically short supply in certain parts of the country and that additional shortages face us in many other localities. These shortages are caused, in part, by the pressures of expanding population, by growing needs of industry, and by modern agriculture's increasing use of irrigation.

Most authorities agree our national requirements for water will nearly double within 20 years. And whereas industry now is responsible for some 40-odd % of the total use pattern, it will account for 60% in 1975.

It is becoming increasingly urgent that we improve the position and quality of the supply and the legal and administrative mechanism for allocating its use.

3rd Largest User of Water

The pulp and paper industry is the third largest industrial user of water, surpassed only by the primary metals industries and the chemical industry. These two industries use more than 53% of the total industrial withdrawal of water, whereas the pulp and paper industry represents a little over 13%. However, the pulp and paper industry uses more process water than any other industry, and treats a higher percentage of its intake. We are more critically dependent on water, and especially high quality water, than most industries.

From a hydrologic standpoint, water is consumed when it is sent back to the atmosphere rather than released to the stream or into the ground where others may use it. Within this context, it is obvious that agriculture is the largest consumer of

* *These are major excerpts from an address at Paper Week 1958 in New York on one of the most critical problems facing the nation and the industry.*

water. Anywhere from 40 to 80% of water used in irrigation is "consumed" against an average of less than 10% on the part of industry. From another perspective, over 90% of water taken in by industry is discharged for reuse by other consumers or by nature. This raises the important question of the condition of the released water.

Five industry categories are responsible for over 85% of the water taken in by all industries. It is estimated if these industries did not reuse or recirculate any of their intake, they would require roughly twice as much as they are now using. The pulp and paper industry stands second from the top in its reuse factor, which is noteworthy when we recall most of our water is used for process purposes.

Three Major Considerations

Returning to the condition and quality of discharged water, we are faced with at least three considerations: 1, the hazard, if any, to public health; 2, the suitability and cost to subsequent users, and 3, its effect on wildlife and recreation.

Any use of water diminishes its quality in some way or other. We sometimes hear that water should be restored to streams in a condition of "pristine purity." Actually this is possible only for nascent water. The water we encounter, whether in the remote wilderness or populated areas, is "adult water." The issue, therefore, is not whether discharged water is pure in a scientific sense but whether it contains impurities that are a hazard or an undue liability to those who may subsequently use or inhabit its flowage.

Everyone would agree that discharges which actively threaten health should not be tolerated. Generally speaking, industry has long since taken care of this problem. It is said, however, that the sewage of nearly 30,000,000 people is still flushed into rivers without treatment.

Industry Vs. Industry

The question of the suitability of discharged waters for use by others is most complex. The headlines of today lead the public to think that industry is in vis-a-vis position with the balance of society on these matters. Actually, this is far from true, and as we look into the future it would appear that the necessity of obaining the optimum use of our water supply will focus attention increasingly on the relationships between industrial plants on the same bodies of water.

As our population grows, the areas of refuge from carbon monoxide and civic congestion will become more remote. Even the most confirmed ur-



MR. STRANGE, who presents reasons why sequential water controls, starting upstream, are better than huge multi-purpose end use projects now widely advocated.

banite would agree we should aim at the highest level of "good housekeeping" in so far as the contiguous streams and recreational facilities are concerned and we should also maintain the integrity of the larger and more distant preserves.

Need More Technical Know-How

In our enthusiasm for this cause, however, we should not impose measures and restrictions on agriculture and industry which are more severe than nature ordinarily imposes on herself. Neither should we overlook the fact that technical know-how does not exist for the reasonable solution of some of the more complex industrial and municipal disposal problems.

The pulp and paper industry has been doing an outstanding job on stream improvement. Through the National Council for Stream Improvement, the Sulphite Pulp Manufacturers' Research League, the University of Washington, and the newer organizations on the West Coast and in the South, it has achieved many technical advancements. At the Institute of Paper Chemistry we have done quite a bit of fundamental research and made field surveys of most bodies of water supporting pulp and paper companies. If we add individual company efforts, this industry has spent many millions of dollars to improve its discharged water. The pollution load of the average ton of production has been reduced by 50% in the past 15 years.

We come to the very complicated and controversial questions of *what* is to be done about the situation, *who* is to do it, and *how* should it be done.

Ownership and Management

Although the issues and problems of water management and distribution are as old as recorded history, we are presently striving to deal with them through the mechanisms of a federalized, competitive society and within the relatively new context of a highly industrialized, dynamic economy. Our efforts fall into the two broad categories: (1) *Formulation*—development of a rational system of ownership, management and usage, and (2) *Alleviation*—improving the position, quality and availability of our supply. The two categories interlock in many ways. Looking first at *formulation*, we find this frequently involves property rights and is thus of particular concern to the state governments. We see a most confusing arrangement of law. On one hand there is the so-called riparian doctrine, and on the other, the doctrine of prior appropriation. In between are so many modifications, exceptions and combinations that the layman becomes bewildered. One suspects that this is frequently true of the lawyer, also.

There is no question but what our water laws require revision and codification. It is important to recognize, however, that these substantially technical steps cannot be isolated from the more fundamental, non-legal issues of how our water resources should be used and managed. This involves the assembly of more hydrologic and economic data than we now possess. This is why many people feel that current efforts to draft a "model state law" are premature. If we push too fast in his direction there is danger that we may wind up in extreme positions—too restrictive or too flexible, leaving too much to discretion of administrative commissioners.

40 Government Agencies

Development and control of water resources has been a major concern of the national government for many years. There are more than 40 different federal agencies dealing with the subject. There are overlapping and competitive viewpoints among these groups. At least $17 billion have been spent on federal water projects, and an amount equivalent to this already has been authorized for new programs. Beyond this, there are studies and proposals which seem to call for an additional $60 billion within the next 20 years or so. Non-federal and private sources have invested around $65 billion in water development, and one observer has calculated that the intermediate future may call for another $280 billion. Our use and manipulation of water is not going to come cheaply.

If we stop at this point, we are passively assuming that all basic poli-

cies have been settled, that we are already on the most effective and efficient course. These would be tragic assumptions because there is good evidence that the job need not be quite as formidable or as expensive as some people would have us believe.

Alleviation—Also Controversial

With this in mind let us consider the second broad category of our water efforts, namely, *alleviation*, or the improvement of the quality and availability of our supply. Here, as in the category of formulation we find considerable controversy and confusion.

There are, first, the competitive and contradictory programs of various local, state and federal agencies which arise out of parochial or restricted concerns with drainage, land reclamation, fish and wildlife management, recreation, stream improvement, flood control, and the like. The controversy in these areas is relatively petty in comparison with the more fundamental conflict between those who would emphasize upstream measures and projects and those who are convinced that first attention should be given to the construcion of downstream reservoirs and dams.

Where and How to Control

Water pays little attention to local, state or even national boundaries as it gathers itself into brooks, streams and ultimately large rivers. There are probably 10 or 12 major river basins in this country. The concept of river basin commissions and inter-state committees to coordinate the larger hydraulic programs has wide appeal.

There are many, however, who fear if we concede too much authority to these administrative bodies they may extend their coordinative responsibilities to the control of matters which are primarily of local concern. We are confronted with the basic question of whether the primary political and financial initiative should come from the bottom upwards or the top downward.

Generally speaking, those who would like to see private enterprise and local governments do the lion's share of the job focus their attention on watershed development and tandem upstream dams, whereas the advocates of federal action stress the building of huge multi-purpose dams which would generate power, control floods and contribute to large scale irrigation projects. Because of their size these structures would have to be located principally on downstream sites. One perceives that the "multi-purpose" school of thought includes social as well as hydraulic engineers.

If we eliminate the emotional, social and political overtones in our consideration of water management, several facts emerge. In the first place, water falls on countless and far-flung watersheds. Our initial responsibility is to see that these watersheds are as efficient as possible in their collection and conservation of moisture. Second, the flowage from these watersheds congregates in smaller rivers, streams and lakes. Here we have an opportunity to marshal and regulate the supply, making it available for agricultural, industrial and municipal purposes and developing power, if the economics are feasible.

Finally, the smaller bodies of water merge into the great river basins. At this point we become more concerned with navigation, the storage and diversion of large quantities of water for agricultural and metropolitan use, the development of major power projects, and coordination of flood control.

5 Reasons for Sequential Controls

Those who would give priority to upstream measures do not reject the need for strategically located, large multi-purpose dams. They contend we should tackle the water management job sequentially and that there are important advantages in going about it this way:

1. It is more efficient. Proper recognition is given to the small watershed as the fundamental unit in water conservation.

2. It is more democratic. Surrounding communities must display initiative and assume responsibility.

3. It is less expensive. Costs are shared along the line, and final projects are less massive.

4. It is more flexible. It does not commit an entire river basin in one grand gesture to a relatively fixed use pattern.

5. It is the most effective and equitable way of determining the need and location of large multi-purpose dams of the future.

The president's water resources policy commission is often cited in favor of multi-purpose projects. It is pertinent, therefore, that we should recall the following sentences from its report: "Once they are completed, major water control structures can be altered only with difficulty, or not at all. There is a sobering finality in the construction of a river basin development; and it behooves us to be sure we are right before we go ahead."

Major Water Conserver

When we examine the pulp and paper industry as a manager of land and a steward of the forests, it assumes a position which is unique among those who have a large appetite for water. It is both elementary and axiomatic that the future of this industry is dependent upon the continuous and expanding development of our nation's woodlands. The vital relationship of forests and their management to water and watershed development is potent. Our first claim to distinction is that we are a part and parcel of the most important single approach to the solution of our country's water problem, namely, the intelligent handling of watersheds. As a major participant in this activity it is incumbent upon us to express our views and to ascertain that other approaches to the supply and distribution of water do not violate this basic regional foundation.

"Produces" 7 Times Its Use

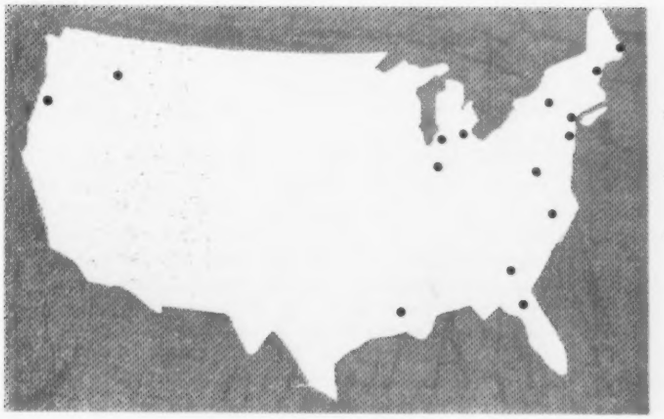
Our second claim to distinction is a corollary of the first. This industry owns and operates approximately 47,000 sq. mi. of forest land. If one computes the average run-off from these lands he finds that it amounts to more than seven times the volume of water which this industry uses or withdraws in its manufacturing operations. Our role as a supplier of water is thus much more significant than our role as a user, and we take our position at the public water trough not so much as a seeker but more as a provider.

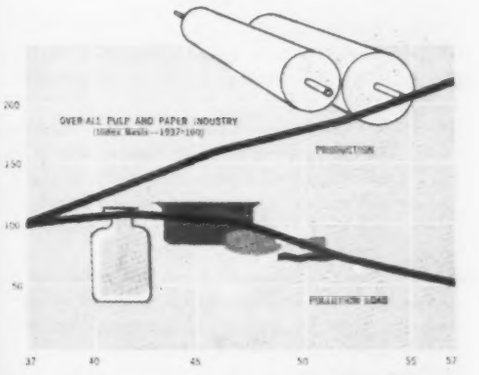
This industry is particularly qualified, both ethically and functionally, to play a prominent part in the many discussions and studies of this country's water problem. I suggest that we do so in a concerted way by contributing to the factual and technical information which is so badly needed and by expressing our views on the legal, social and economic issues which over-ride all other considerations in their importance. If we fail we may find that we have not assured an adequate supply for our own future, and we shall have forsaken a very real opportunity to advance the general welfare. ●

State Demands "Unrealistic"

State demands for cutting stream pollution by big percentages are unrealistic because research has not yet shown industry how to achieve such cuts and stay in business, says Stanton W. Mead, president of the Sulphite Pulp Mfrs. Research League yesterday in his annual report.

The threat of ever tougher pollution standards imposed by the state has cut prosperity and jobs in pulp and paper towns by holding down growth of the sulphite industry, said Mr. Mead, also president of Consolidated Water Power & Paper Co.





Research projects at universities here . . . **Have helped the industry in stream improvement**

Water

"Non-use is as much a waste as abuse"

The story of the pulp, paper and paperboard industry's attitude toward rivers is beautifully told in "All the Rivers Run into the Sea," annual report of the National Council for Stream Improvement.

The title is from the Bible, "All the rivers run into the sea; yet the sea is not full; unto the place whence the rivers come, thither they return again" (Ecclesiastes 1:7).

Some 10 million gallons of water each year for each one of us fall upon this country, says the National Council in its report. Agriculture uses 95 billions every day for irrigation, most of which is consumed. Industry uses over 70 billion gallons, much of which is returned to the rivers for other uses.

Three-quarters of all water taken in by the pulp and paper industry is recirculated, states the report. The rest of the nation's industry recirculates only about one-half of the water it uses.

Conservation is . . . Use

"The flow of water to the sea is sheer waste unless some use has been made of it. The river is inexhaustible and so it will return but—no denying—this day's flow is futile unless we have used it," says NCSI.

"Here is the point: non-use is as much a waste as abuse. Balanced use is conservation. . . . The river helps create the economy; it serves also to carry away the waste. Waste materials are an essential part of the economy; the river serves the essential role of removing the wastes.

States NCSI: "This, then, is a fundamental principle of conservation, one of the inexhaustible resources of the river is its ability to assimilate waste materials. Not to use the capacity is a waste of a natural resource. To abuse this ability is also a waste of a natural resource because abuse renders the river unsuitable for some of its other uses."

The illustrations above (and the map on the front cover of this issue) are from NCSI's annual report, "All the Rivers." The research projects indicated on the map are as follows:

University of Michigan, Stream Analysis.

Kalamazoo College, Deinking Waste Treatment.

Purdue University, Strawboard and Semi-Chemical Waste Treatment and Color Reduction.

Rutgers University, White Water Treatment and Slime Studies.

Oregon State College, Sulfite Waste Treatment and Aquatic Biology.

University of Georgia, Aquatic Biology.

Bates College, Sulfite Waste Treatment.

University of Maine, Sulfite Waste Treatment.

Virginia Polytechnic Institute, Semi-Chemical Waste Treatment.

Louisiana State University, Kraft Waste Treatment—Color Reduction.

Syracuse University, Sludge Dewatering.

Columbia University, Pulp Waste Treatment with Atomic Wastes.

University of Florida, Atmospheric Pollution Study.

State College of Washington, Atmospheric Pollution Study.

North Carolina State College, Aquatic Biology.

Association Leaders for 1958

American Paper & Pulp Assn.—JOHN R. KIMBERLY, Kimberly-Clark Corp.

Pulp Consumers—D. G. DRISCOLL, Sorg Paper Co.

Pulp Producers—JAMES L. RITCHIE

Salesmen—PAUL C. CRAIG, Consolidated Water Power & Paper Co.

Stream Improvement—GEORGE E. DYKE, Continental Can Co.

Sulphite Paper Mfrs.—EARL M. MCCOURT, Consolidated Water Power & Paper Co.

Writing Paper Mfrs.—HAROLD HOLDEN, Eastern Corp.

Newsprint Service Bureau—M. C. MCDONALD, Great Northern Paper Co.

Kraft Paper Assn.—S. D. FLEET, Albemarle Paper Mfg. Co.

Paper Napkin—R. W. BERTRAM, American Can Co.

Glassine & Greaseproof—BENTON R. CANCELL, St. Regis Paper Co.

Tissue—JOHN B. KOHL, American Can Co.

Blotting Paper—PAUL H. TRAVIS, Rochester Paper Co.

Coated & Processed Paper—WILLIAM B. SNOW, Middlesex Products Corp.

Specialty Paper and Board—CARLTON A. DENNY, St. Regis Paper Co.

Printing Paper Mfrs. Assn.—W. H. WILCOX, S. D. Warren

TAPPI—WARD D. HARRISON, Riegel Paper Corp.

American Pulpwood—GEORGE B. AMIDON, Minnesota & Ontario Paper Co.

Advocate of Price Cuts Stirs Paper Week Protests

David L. Luke—in his speech on final day of Paper Week 1958—took sharp issue with one of the few stories from the big industry meeting to make newspaper headlines.

"Price Cuts Called Cure for Slump" said the New York Herald-Tribune in reporting a talk at an open APPA meeting by an ex-executive secy. of the National Assn. of Purchasing Agents. George Renard, the p.a., said "constructive pricing action can do more to cure the current recession than anything else."

He blamed increased prices for curtailing demand, production and employment and said this was a "perfect formula for a depression." Government spending won't stop it, he declared, adding that if prices can be lowered, business can be good as it was during the 1920's. He urged his industry audience to "convince your executives of this" and fight further cost increases.

Three days later, Mr. Luke, although not making any reference to headlined Renard story, said prices will be maintained and may increase, as evidence of the good health of the industry.

PULP & PAPER editors questioned several industry leaders after the Renard speech and none were found to agree with him. One described his theory as "absurd." "We will not sell a single ton more of pulp or a single ton more of paper by cutting prices," was the general consensus of those interviewed. Prices would be cut all the way down the line from wood producers to final converters and no one would gain, but grave dangers would develop, they said. There was no doubt that industry leaders—at least those questioned—had no sympathy whatever with the Renard scheme.

Prices to Hold or Rise

Voicing optimism in "swan-song," David Luke points to factors already building recovery. Cost-price squeeze will end, he says

By DAVID L. LUKE*

Former President of APPA, President of West Virginia Pulp and Paper Co.

● Just as we were building up problems for ourselves beneath the surface of our prosperity a year or more ago, so we should recognize now that during the past year we have begun to work our way out of these problems.

The capacity problem that our industry faces today is not the one of extreme difficulty that threatened a year ago, but one of more manageable and more transient character. Not only does it seem likely that the entire imbalance between capacity and demand will disappear within the next two or three years, it is also likely that the effective excess in the intervening period will be less than many people assume.

"Practical" Capacity is Lower

Experienced people in our industry know that under intensely competitive conditions, such as exist today, practical or effective capacity shrinks well below both theoretical and historical capacity. The reasons are simple. Each company extends itself to provide its customers with better and quicker service. We spend more effort and more machine time on research and experimentation for improved and new products. All these effects cause our practical capacity to fall below the capacity that would be indicated by the historical basis.

Instead of 35 million tons indicated as our historical capacity today, I believe that our practical capacity under present competitive conditions is closer to 32 or 33 million tons. Similarly, 18 months from now, I believe that our practical capacity under the protected highly competitive conditions will be closer to 34 million tons than to the 37 million tons indicated.

If net demand continues to grow at the projected rate, then along about 1960-61, the pressure will begin to bend our practical capacity upward toward the curve that represents capacity on the historical basis.

The current excess of capacity has been accentuated by an interruption to the normal year-to-year growth of demand. But let us not exaggerate it. In the calendar year just ended our industry operated at roughly 91% of capacity—a level that would be welcomed with cheers even in good times by virtually any other industry.

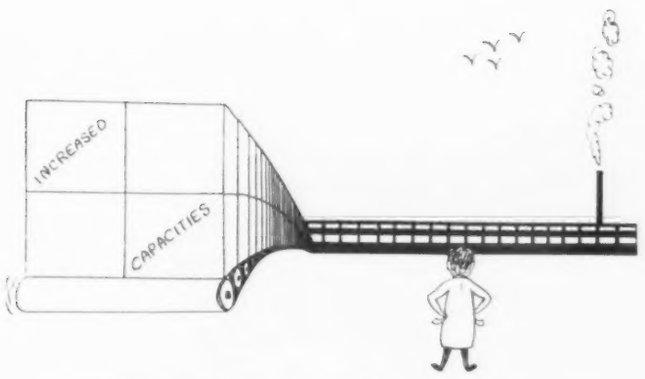


MR. LUKE'S SWAN-SONG: "Capacity problem is more manageable, more transient . . ."

Paper Thrives on Competition

Competition is a great spur to efficiency and progress. The paper industry has thrived on it. For we have to compete not only amongst ourselves, but against other industries. Our greatest growth has occurred since the advent of radio and television, which competed vigorously with us for our markets in the field of publication paper. Today we find that both TV and radio are contributing more to our markets than they take.

* *Excerpted portions of his final address before the American Paper and Pulp Assn. as its outgoing president, at Paper Week 1958.*



1958's PROBLEM: Increased capacities must find new outlets . . . .

Much of our growth since the 30's has been earned in competition with steel, glass, wood, and textiles. We have made large inroads in markets previously occupied exclusively by these materials.

In the last few years we have heard much talk about some new external competitors—the films, the foils, and the plastics. The films and the plastics are generally associated with the glamorous chemical industry. It is not sufficiently recognized that the pulp and paper industry is actually a part of it, and a rather large part too. Woodpulp is really chemical cellulose. We make it in high purity for rayon, which we wear, and for carboxymethyl-cellulose, which we can eat. We welcome the films and plastics as members of our own industrial family. The films, the foils, and the plastics will complement and fortify our products in various markets to a greater extent than they will take markets from us.

Nothing is Wrong with Prices

Some persons seem to have the idea that a moderate surplus of capacity cannot exist in a truly competitive industry without a collapse of prices, or at least some marked reductions of prices. And they sometimes suggest that when widespread and severe price-cutting fails to appear, something is wrong with competition.

Today the conditions responsible for such disruptive changes do not prevail. There are no rich virgin territories available, investment, transportation, stream pollution and other costs considered, which make possible new pulp supplies on an economic scale comparable to the tidal waves of a generation ago.

Whereas United States paper and paperboard producers formerly relied upon purchases of market pulp for as much as two-thirds of all their fibrous raw material requirements, they now produce well over one-half of their fiber requirements as a part of integrated operations. With this woodpulp subject to the discipline imposed by an integrated calculation of total manufacturing costs and of the markets and market prices, it is not surprising that the extreme overexpansion of pulp capacity that threatened a year ago, has quickly moderated.

Prices—Stable or Rising

As manufacturers, we find that despite the present and prospective moderate excess of capacity, we must pay no less than before, and in most cases more, for each hour of labor, each cord of wood, each ton of chemicals, each ton-mile of freight. These substantial and sticky operating costs offer formidable obstacles to price reductions. With fluctuating raw materials prices less important, and sticky or rising manufacturing costs more important, stabler or rising finished product prices are to be expected in the paper industry.

There is another fundamental economic force in the industry that is operating to produce higher rather than lower prices for our products. This relates to our heavy fixed capital investment. Our prices must be high enough to cover our fixed as well as our variable costs; high enough to permit us to maintain our plants and equipment in a high state of efficiency, and to justify us in spending the large sums required each year for replacements, improvements, and for normal growth.

For the past 16 years, during which our productive capacity increased by 75%, our industry made the remarkable record of operating at an average annual rate of 92% of capacity, historical basis. In the preceding 11 years, 1930-40, inclusive, our average annual operating rate was only 70%; and in the years 1918-29, inclusive, it was only 78%. Our extraordinarily high level of operations during the past 15 years minimized our fixed costs per unit of output. In consequence, our selling prices became geared to the extremely low fixed costs that are possible only with an extraordinarily high rate of operations.

Run at 80% to 90% Capacity

Each paper manufacturer is faced with the fact that his prices must be such as will allow him to meet both his fixed and his variable costs and to earn a reasonable rate of return on his investment at a more normal rate of operation than the peak rate of 1956, averaging perhaps between 80 and 90% of capacity (a capacity which is a good deal higher than in the 1920's and 1930's).

Whereas prices in the steel industry are such that the leading companies seem able to operate profitably even at 70% of capacity or less, few companies in our industry could do so with their present prices. I believe that this fact is a potent force that will operate to bring about its own correction. It is likely to be far more potent under today's conditions than in the 1920's and 1930's.

Luke Before Salesmen

What David L. Luke had to say, as spokesman for APPA, at the annual Salesmen's Assn. of the Paper Industry luncheon in New York during Paper Week, fits neatly into the pattern of his major address two days later (as reported on these pages). Here are some things he said:

"Don't pressure the markets when we have more production than our customers want to buy."

"This marginal surplus can be used creatively to capture new markets. We have a product which is amazingly versatile and economic."

Luke Before Pulp Consumers

At the annual Pulp Consumers luncheon, Mr. Luke spoke again—this time as the voice for the Pulp Producers, who were guests. Here again are some of his remarks:

"It will take several years to soak up over-capacity. The government has the tools and is experienced in their use, to prevent extended hardships."

"We have a firmer price structure than in previous years. Our prices must stay up."

"We must use our temporary setback, painful as it may be, as a springboard for opportunities ahead."

SAPI Votes on Economic Outlook . . . Speaker Cites 4 Ways to Improve Profits

• The 1,660 top management and sales executives of the pulp and paper industry, along with some customers, who attended the Salesmen's Assn. luncheon at Paper Week in New York in late February, were called upon to express their views of the economic outlook. They did it by a show of hands.

About 600 or more raised their hands to vote that business was getting better.

About 300 or less raised their hands to vote that business was falling off.

Practically all of them raised their hands to vote that they expect an upturn at the end of 1958.

Walter E. Hoadley, Jr., 41-year-old economist and treasurer of Armstrong Cork Co. and one of President Eisenhower's economic advisory group, called for the vote before he launched into a speech in which he predicted a "favorable business environment through 1958" but "no sharp upturn" this year.

Which Club Do You Belong To?

He noted that businessmen are "joining the 60-day club, 6-months club or 6-year club," depending on when they expect the next marked upturn. He declared "too many have joined the 60-day or 6-months club, on the assumption that the current adjustment is nearly over." His view was there will be an "interim period of slow growth of two to five years, when we will more than ever be on our own." If the situation weakens there will be "a great trek to Washington to do something about it, and possibly a tax cut before the year is over."

This is no time, he added, for blind pessimism or optimism, but for "down-to-earth realism."

The way to improve your profits, he said is to:

(1) Take a fresh look at markets, know the customers who will contribute to profits and who will be stronger—"Zero-in on the target before firing expensive sales efforts." Place each customer under a spotlight.

(2) Take a fresh look at products, bringing in new and unique products to offset those losing acceptance.

(3) Take a fresh look at personnel—"business cannot afford ineffective personnel or the loss of competent, promising people." He also said "morale can be crucial when business is slow."

(4) Take a fresh look at costs. Money always remains tight for people who have not proved their ability to control costs and use money wisely.

One remark stood out when Glenn R. Spicer, Hammermill's Pacific Coast sales chief and president of SAPI, introduced the speaker. He said:

"This is the year the men will be separated from the boys."



HOW TO BOOST PROFITS told industry by Mr. Hoadley, who also said: "These times are normal—if we are shocked we have forgotten we all said boom days couldn't last."

Pulp Importers Foresee Upturn

BY WILLIAM B. McGOLDRICK

President, Assn. of American Woodpulp Importers and General Mgr., Price & Pierce Ltd., New York

• We look for an upturn before long in paper operations, and with it, a strong enough demand for pulp to see the newly produced pulps finding the rightful share of the markets.

On the general business scene, we see the growing concern in Washington. This is of similar concern to people the world over. And not a bit less, of concern to pulp producers outside the U.S.A., for if slackened economic activity in the U.S.A. is to also mean a slackened rate of operations generally for the consumer of pulp here, then it will become increasingly difficult to properly sell available production. But I am sure that none of us is losing faith in the growth prospects of our industry.

1957 was the year that bore out the predictions that pulp supply would be more than ample because of new production facilities outstripping the growing needs. This situation has brought about increased competition in all markets, as pulp producers seek better worldwide distribution.

For example, Scandinavian and Finnish producers have always been important suppliers to the U.S.A. market and most of the sellers from that area have done their best through the years to maintain a competitive foothold here, and they will undoubtedly continue to do so where their qualities are needed for the special grades produced by so many of the U.S.A. paper mills.

Leveling Prices World Over

In years past, there have been price dislocations from time to time where-



MR. McGOLDRICK expects importers to hold or improve markets in U.S.A.

by nearer-to-home markets for Scandinavian and Finnish producers naturally netted more profitable mill returns than shipments to the States. Greater production in North America has forced many North American producing mills to sell more competitively in European (and other) markets, with the result that this force is acting as a leveler of prices the world over. So, with prices in U.S.A. yielding nearly the same returns as other markets, the Scandinavian and Finnish sellers expect to hold on to their market position in U.S.A. and even build on it as time goes along.

Reduction in Unbleached Grades

Imports from Scandinavia and Finland were down in 1957 as compared with 1956. But an analysis of the figures shows that the reduction was mainly in unbleached grades. Unbleached sulfite has been particularly sensitive to the new competition from increases in semi-bleached kraft pulp production.

On the Canadian side of the import picture, most of the new pulp production has already come into the market and a good part has found its natural

home in the U.S.A. The Canadian import totals of pulp to U.S.A. for 1957 were only slightly lower than for the preceding year. The British Columbia strike, of course, had something to do with the slight falling off. While strikes, in general, do not help anyone, the serious 12-week strike at the mills in British Columbia undoubtedly had a stabilizing effect on the pulp market here, particularly as it came during the year-end holiday slack period.



MR. McCOURT

Earl (Mickey) McCourt Heads Sulphite Mfrs. Assn.

One of the most popular elections of Paper Week 1958 was that of Earl M. (Mickey) McCourt, a veteran Consolidated Water Power & Paper Co. sales and production executive, to be the new general chairman of the 26-year old Sulphite Paper Manufacturers Assn., Inc.

Actually, the name of this prominent association is now a misnomer, as the member companies are making various other grades besides sulfite. And so it is with Mr. McCourt's career of 38 years in the industry—he has been an executive in production and sales of several major grades.

Born Nov. 14, 1895 at St. Croix Falls, Wis., he graduated from Lawrence college and almost his first job in 1920 was at Consolidated's Interlake pulp mill, a pick-and-shovel assignment. He rose from this position to play one of the leading roles in the industry from 1937 to 1952 in developing the use of high speed machine coated paper by the then new mass circulation magazines. His job was liaison between production and sales and in sales for *Life*, *Time* and other such major consumers of coated papers. Since then he entered new fields as sales manager for Consolidated's waxing papers, tissue, manifold, paperboard and the brand new pulp by-products.

En route to these assignments, he was storekeeper at the Biron, Wis., mill; purchasing agent at the Port Arthur, Ont., newsprint mill (when Consolidated sold it to Abitibi, he stayed on a short while, but rejoined Consolidated); then he sold Interlake pulp and later Stevens Point waxing grades. Then came the late Pete Massey's invention of the Consolidated high speed on-machine coating process and life changed radically for Mr. McCourt and many of his associates.

In World War I, he served as lieutenant in the quartermasters' corps in France. His son, James, is tour boss for eight machines at the big Crown Zellerbach Camas mill.



PRESIDENT THOMAS, Battelle Institute, tells how research can increase paper uses and markets.

To Increase Paper Use, Analyze Other Fields

This industry should make a continuing analysis of the effects upon it of other fields of activity.

Dr. B. T. Thomas, president of Battelle Memorial Institute, Columbus, O., offered this as "one of the most constructive things" this industry can do at an APPA meeting during Paper Week presided over by Dwight L. Stocker, KVP Co. president.

Asked Dr. Thomas: What are the potential effects on pulp and paper of rapid changes in communications, in electronics, data processing, automation, new developments in transportation, nucleonics, modern warfare, protections from fallout, medicine, education and its stepped up demands, and —last but not least—agriculture—"a great potential consumer of cellulose?"

This he called "offensive research." Defensive research, he said, requires 1, constant surveillance of competitive materials and products, 2, awareness of opportunities through small improvements in price and quality, and 3, continuing surveillance of changing consumer patterns, based on incomes, psychology, habits, etc.

Paper competes most often because it is cheaper—but more and more it should compete because it is better, he said.

"Consider the change on the use pattern of paper if its strength could be increased by a substantial factor as a result of a breakthrough in our knowledge of the cellulose molecule," said Dr. Thomas. He noted the satellites and missiles had caused a tremendous consumption of newsprint—"the greatest thing for paper since the invention of indoor plumbing."

Six Companies Sponsor Joint Research Center

Six companies have established Fiber Products Research Center for the purpose of conducting research projects, according to James P. Lewis, president of the new organization and also of The J. P. Lewis Co.

The six sponsors are: Brownville Board Co.; The J. P. Lewis Co. Latex Fiber Industries, Inc.; Milwaukee Lace Paper Co.; Payne-Jones, Inc.; Smith Lee Co. Inc.

The companies do not manufacture allied product lines. All but one have their own manufacturing and distribution facilities. Two are specialty paperboard manufacturers. One makes specialty papers based upon use of rubber latices. One is a coater producing simulated leather materials. The remaining two are paper converters.

The companies joined in the center in order better to compete with larger organizations which have their own large research divisions. The research center will be housed in Beaver Falls, N. Y. and operations are scheduled to begin at the end of 1958.

U.S. Paper and Board Capacities—1956-1960

(In Short Tons—6-Day Basis)

	Paper	Board	Total Paper and Board
1956	15,034,000	16,868,000	31,902,000
1957	16,136,000	17,565,000	33,702,000
1958	16,989,000	18,647,000	35,636,000
1959	18,021,000	19,431,000	37,452,000
1960	18,364,000	19,536,000	37,900,000

Prepared by M. C. Dobrow, executive secy., Writing Paper Mfrs. Assn.

Paper Week's Parade of Performers—What They Said in Small Jiggers

Business Leaders Influence History, says Robertson

Newly elected vice president of the APPA, which his father headed for two terms, Reuben B. Robertson Jr., said: "What business leaders do now and in the months ahead will have a tremendous impact on the history of tomorrow."

The president of Champion Paper & Fibre Co. declared "we must not let local self-interest and minorities determine our destiny on the national and international front. Our mutual security program must have the support of the American people. It is our strongest single instrumentality for detering communism."

Industry Leaders Should Express Views to Congress

Another speaker at the Open Industry meeting, Donald J. Hardenbrook, vice pres., Union Bag-Camp Paper Corp., said businessmen cannot rely on trade associations or the National Assn. of Manufacturers or the Chamber of Commerce to represent them in legislative matters.

"Nothing could be farther from reality," he said. "Political responsibilities cannot be attended to by proxy. Businessmen must keep abreast of developments themselves and express their views to Congressmen and others."

Markets Await This Industry in Many Overseas Lands

Latin America is "our most promising and natural market," said George Cobean, Champion Paper's consultant, in an export committee meeting at Paper Week. But he said "our prospects in the South Pacific and in non-communist countries of the Far East are promising . . . demand for all papers is increasing notably."

The pulp and paper and paperboard industry is one most likely to benefit by the fast-developing Western European Common Market, which will lower trade barriers in free continental Europe, said Patten D. Allen, director of the foreign division, U. S. Bureau of Foreign Commerce.

Eric G. Lagerloef, author of the APPA's "Western Hemisphere as a Market for U. S. Paper, Board and Paper Products," said these countries will increase their consumption of paper and board by 2,000,000 tons in the next seven years or sooner. About one third will be met by imports.

Market Pulp Consumption Declined About 7.4% in 1957

This was the figure presented at Paper Week by Reed R. Porter, executive secy., Assn. of Pulp Consumers. Meanwhile, the decline of paper and board production was only about 2.5%. Market pulp consumption of non-integrated mills declined only 1.9%, while that of integrated mills declined 13.2%, he said.

Canadian supplies increased from 39% to 42%, U.S. supplies dropped from 49% to 48%, and European supplies dropped below 10% for the first time in history. Mr. Porter warned against price wars and dumping as "no solution" and said the major problem is to "bridge the short-term overcapacity condition without harming ourselves financially and competitively."

Don G. Driscoll, president of Sorg Paper Co. and president of Pulp Consumers, also emphasized the great increase in market pulp coming from Canada. Speaking at the annual Consumers' luncheon, he noted that four new market pulp mills have come into production in the past year in Canada.

Warns: Don't Pour Money Into Asia without Preparation

As seems to be a custom of the Pulp Consumers' group, its annual luncheon audience of producers and consumers, filling the Waldorf's Sert Room, again heard probably the most distinguished and stimulating speaker of the whole Paper Week. Every year, it looks like it will be harder for the Consumers to keep up this reputation, but they always come through.

Filmer S. C. Northrop, Sterling professor of philosophy and law at Yale, was the man this year and he proceeded to give his audience a profound lesson in Asiatic customs and philosophy. Even the best-read and informed pulp men no doubt learned much from him. His engrossing speech pointed out that "billions of aid moneys to Asia will simply go down the drain if we do not develop the mechanical and mathematical minds in those countries to use this aid wisely and efficiently."

He emphasized one powerful barrier against American aid money reaching the right outlets—the "Asiatic ethic that every moral obligation a man has is tied to his family" and he cited several dramatic off-the-record cases of how family loyalties, in particular in the powerful ruling families, would militate against constructive use of foreign aid money. These loyalties to family take precedence over legal contracts.

He warned that Communism may step into "the vacuum" if Western efforts to uplift these countries fail.



Elected to Head Associations

HAROLD HOLDEN, president of Eastern Corp., Bangor, Me., was elected president of the Writing Paper Mfrs. Assn., at its 97th annual meeting, succeeding F. Nelson Bridgham, chairman of the board of Strathmore Paper Co. Mr. Holden has had wide experience in the industry, as well as in the supply field as he was a former Hercules Powder Co. manager in New England.

BENTON R. CANCELL, who is both executive vice pres.-mfg. for St. Regis and president and gen. mgr. of Rhinelander Paper Co., was re-elected chairman of the Glassine & Greaseproof Mfrs. Assn. Frederick S. Leinbach, exec. v.p., Riegel Paper Corp., was re-elected vice chairman.

Industrial Research: It's Big Business

With some 87 billion spent by industry in 1957 and increasing at rate of 12% per year, industrial research is bigger than the petroleum, rubber or furniture industry, said Dr. Wendell W. Moyer, director of research, central research and technical dept, Crown Zellerbach Corp., at the APPA Materials and Cost Committee session.

Developments now going on in research, says Dr. Moyer, will affect materials and costs in the future.

Polyethylene will probably be the first billion dollar plastic. Dr. Moyer cited polyethylene garment bags. "If they are better than paper," he said, "there's no way we can keep them out. We haven't yet begun to develop all possible uses of paper.

Prodded as to whether United States per capita paper consumption had reached a saturation point, Mr. Moyer hazarded a guess that it might go up but not at the same rate and might reach 500 lbs. But he wouldn't stick his neck out as to the date.

O'Connor: Supply-Demand Balance Is Now Realistic

This was the burden of a Paper Week message from Robert E. O'Connor, in his first Paper Week in his official capacity as executive secy. of APPA. Demand and supply will continue about the same in 1958, he said.

Dr. E. E. McSweeney, manager of Battelle Memorial Institute's chemistry department, said "applications research can materially aid in broadening paper industry markets." He urged that the industry note how the chemical industry has developed to a high degree the concepts of applications research.

Paper Continues Better Off Than Others—Vogel

If the revival of demand expected in the latter half of 1958 materializes, it is possible this year's output of paper and board in the U.S.A. will approximate 31,200,000 tons, John H. Vogel, economist of APPA told the Tissue Assn. meeting in Paper Week.

He pointed out that steel was currently operating at 55%, automobiles were 25% behind 1957 and other industries were behind paper, whose ratio had only dropped to about 85%, at the time he spoke. Price increases for paper and board have been greater than most non-farm commodities but less than for iron and steel.

"At a given point in time," said Mr. Vogel, "a nickel saved on the cost side is better than a dollar increase in price if that dollar represents only an offset of increased costs."

He predicted demands for wage increases in 1958. "No one—no matter how good his charts and arguments—really knows how good or bad business will be this year," he said.

Horizontal Size Press: A Talking Trend

Developed by a Mead Corp. employe some years ago, the horizontal size press (where the application rolls are placed side by side rather than on top of each other) is now getting quite a play in Europe and is attracting attention in the United States. This was discussed by TAPPI's Fourdrinier Committee's panel session on size press operation at Paper Week.

The horizontal size press provides more uniform application, is a cleaner operation because the size solution is collected in savealls at each end of the press and recirculated. Simplicity of operation, low cost installation and a big advantage is said to be the higher solids content which can be used.

Some mills are reportedly now using this as a gap between the size press and on the machine coating. One mill is said to be applying 6 lbs. per ream on a horizontal size press used for coating.

Other ideas brought out during the panel discussion:

Precoating ahead of the size press avoids mottling.

Chromium plated rolls give a more uniform caliper.

Infra-red dryer ahead of a Mt. Hope roll eliminates pick-up troubles.

Many coating mills are using Du Pont Teflon coating on one or two dryer rolls right after the coater. Reason: you can get only so much drying with air; Teflon helps set the coating and the sheet seems to ride right over it without picking and allows mills to run a wetter coating into the dryers.

Continuous Pulping: Growing and Getting Bigger

Almost four million tons are being produced by continuous systems (Pandia: 1.5 million; Kamyr, 1.6 million and Asplund, 3/4 million). Another possibility: instant pulping.

Continuous pulping is a major new trend today in the pulp industry. Uniformity of production, uniform steam and horsepower requirements are some factors cited in its favor plus low labor required.

But another process, instantaneous pulping, intrigued mill men at a TAPPI session during Paper Week. The new system, not yet in commercial production was described by R. C. Sproull, Philip Morris, Inc.

Using pressures in the range of 1,000 psi and temperatures around 536°F, it is possible to produce pulp in 15 to 90 seconds with great softness and good opacity, in the yield range of unbleached kraft (50%), explained Mr. Sproull. The process would use acid to split the cellulose, resultant pulp can be bleached to 80-85 GE brightness with 3% chlorine and may be a good source of alpha cellulose.

About continuous processing in general, Mr. Sproull said it should be possible to take wood and separate it into its components without destroying its chemical reaction. Continuous processing should be less costly (possibly 10% to 20% he guessed) than batch.

Operating costs are less too, he cited. Lower steam requirements, lower labor costs, lower rate of corrosion on digester walls and more uniform product and better control using instruments. Also, flexibility is an advantage.

REPORT FROM PAPER WEEK

First Report from Demopolis Kamyr on Southern Pine

Many mill men were amazed to hear of the uniformity of product being produced by a Kamyr digester at Gulf States Paper Corp.'s. new Demopolis, Ala. mill. Variations were less than 1/2 of a TAPPI permanganate.

In a paper prepared by Carroll D. Owensby and Henry P. Halsell, operating experiences on a 300 ton per day unit on Southern pine (loblolly) showed that a remarkably uniform product of high quality, resulting in easier control of bleaching, smoother steam load and ease of operation were obtained. Especially interesting is that the whole operation requires only one man per shift, whose duties also include routine maintenance, lubrication, logging data and housekeeping.

Cooking time is about 2 3/4 hours, knots in the pulp have been low, rejects from flat screens averaged less than 1%. Bleaching operations, simplified by pulp uniformity, permitted closer control of bleached product.

TAPPIites Asked to Help Bring Youth into Industry

Ward D. Harrison, president of TAPPI for another year and vice pres. and gen. mgr. of production, Riegel Paper Corp., in his Paper Week address quoted an old Chinese saying: "It is up to you to light a candle, rather than curse the darkness."

He called upon his members "to interest young men in technical work, promote plant tours, participate in high school programs, counsel young men, serve on PTA's and school boards." TAPPI's local sections are "the effective means of attacking the problem at its roots," he said.

Zima Honored for 30 Years With Newsprint Bureau

An inscribed silver bowl was awarded at Paper Week to John J. Zima, treasurer and head statistician of the Newsprint Service Bureau, honoring him for 30 years' continuous service. The award was by the directors at the Bureau's annual meeting.

See The Last Word—PULP & PAPER's Editors' Page—the last page in this issue for editorial comments on this year's Paper Week and some thoughts about it—weeks after it is over.

Materials Handling Do's and Dont's

Sheet handling, use of lift trucks, best design for conveyors, other aspects of product direction discussed by top men in field

By WILLIAM F. DIEHL, Jr.
Southern Editor, PULP & PAPER

—Atlanta

● If materials handling is to be successful it must take place in the right place at the right time. . . .

Georgia Tech's Dr. Paul Eaton, associate professor in industrial engineering and a handling consultant, was speaking and it was a good starting point. For the following three days more than 70 engineers from various industries carefully dissected the pros and cons of materials handling with the analytical curiosity of surgeons.

The scene: Atlanta and the sprawling campus of Georgia Tech, focal point of a recent three day short course in materials handling. This session attracted many representatives from the pulp and paper industry and allied fields. Dr. Eaton got things going with some cold facts:

1. From raw material to finished product, only 20% of time consumed is actual production time. In all, 80% of the time is eaten up by interim storage, internal transportation, shipping preparation;

2. Automation must come in this age of shrinking time. Preplanned handling and a laid-out system, is vastly cheaper in the long run than Johnny-come-lately changes;



Flenicken ..... DeBruhl

INDUSTRY was well represented at short course by men like Cecil Flenicken of International Paper and Paul DeBruhl of Masonite Corp. at Laurel, Miss.



Blake ..... Day

HIGH INTEREST was generated at sessions, like this post-talk discussion between Georgia Tech's John Day and Duncan Blake of Union Bag-Camp at Savannah.

3. Capital unnecessarily tied up in inventory is frequently the result of incorrect handling of material and improper production balancing;

4. The basic secret to increased plant efficiency and capacity is having the material in the right place at the right time and in the right quantity.

"Don't Swim Blindfolded . . ."

One essential of good materials handling, said Dr. Eaton, is careful planning. This theme was played over and over during the session. Dr. Eaton's example seemed conclusive. As a consultant, he warned a cotton mill against installing a certain type conveyor to remove a bottleneck suggestion the firm make a complete study of the entire handling system first. They ignored his warning and installed the conveyor. Result: One year later the management admitted it had "fouled up" and created more confusion by installing machinery which was not compatible with the rest of the system.

What Masonite Learned . . .

A splendid case history in preplanning was described by Paul K. DeBruhl, supt. of secondary operations of Masonite Corp. in Laurel, Miss. Built in 1925, the mill grew to a 3,000-employe operation, had to be changed. Here are some of the observations made by Masonite in setting up a smooth, efficient handling system:

1. A master plan is necessary but the plan cannot be inflexible. Ideas on paper sometimes must be changed to work.

2. People are a prime consideration. They must be trained to fit into the overall picture. Mr. DeBruhl admitted he once designed a plan which appeared infallible on paper but failed because employes were not properly trained.

3. Batch processing is expensive. Continuous processing is advisable whenever possible.

4. When producing many different grades and types of products, a minimum storage warehouse is necessary for interim storage, so products can be taken off the production line, returned later for completion of processing. Machines do not have to make frequent changes when warehouse is used.

5. Pallet racks are advisable for small "cat-and-dog" orders. Small warehouse.

6. Equipment should be standardized when possible, thus reducing items should be kept separated in spare part inventory, permitting more complete training of personnel. Masonite requires its lift truck operators to refuel and reoil their own trucks, giving them more pride in their equipment.

7. Packaging was developed from a hand operation to a semi-automatic machine operating in conjunction with cutting operations. More time and money was saved by having all labels printed on tape to eliminate costly hand-labeling.

8. Continuous growth usually results in overlapping of equipment. Studies should be conducted to eliminate this costly practice whenever possible.

9. Because its product is ordered in every conceivable combination of size and type, orders are diagramed before going to the car loader. Orders in stopover cars are loaded on a "last in—first out" basis.

10. Equipment such as lift trucks, conveyors, should be modified to fit

the entire scheme of handling rather than the system designed for the machine.

Hints on Woodyard Design . . .

Jack Thompson, design engineer for Jervis B. Webb Co. in Atlanta, Ga., had some tips on designing woodyards.

The average 12x45 barking drum handles about 30 cords an hour, said Mr. Thompson. Conveyor capacity should be designed to handle at least 50% over the drum capacity in order to take care of surge loading.

Any transfer point, either chute or guide plate, must be designed so wide open that it is impossible for any size log to lay in any position at the point. This will prevent jamming. Chutes should never be so narrow that it is possible for logs to become wedged.

The slope of any chute should be sharp enough so all bark knocked off logs will flow through and not build up in corners. Bark is reluctant to flow on slopes of less than 50 degrees. Too steep a slope will permit the log to fall too swiftly.

To avoid bark spillage (a fire hazard) the chute should completely surround the head sprocket or pulley of the conveyor feeding it. In belt conveyors, the bottom chute plate should come up behind the head pulley and should incorporate a belt scraper or brush to knock bark and fines off the belt.

Another warning by Mr. Thompson: When handling chips be sure to consider their shingling action. He cited one mill in which this was ignored and "dynamite was nearly required to free chips from the storage bin after they formed an arch."

More on Wood Handling . . .

Duncan Blake, of Union Bag-Camp in Savannah, discussed and showed pictures of innovations in wood handling. Blake described the FWD tractor, with bigger wheels for better flotation; the peeling action of the Soderhamn Cambio debarker; success in using chips from sawmill waste; the new Harrison Harvester, which acts like a big arm and plucks pulpwood sticks from the ground like a three-fingered hand; the Hiabob-type tractor, which is beginning to find its way into the South; underwater log storage; the use of flume systems at Union Bag (cost of wood delivery from yard to chip bin was cut from $3 a cord to $1 a cord).

At Savannah, too, pulpwood trucks are tilted by a sling machine and the pulpwood is dumped directly into the flume when possible, bypassing costly crane operation.

The Final Note . . .

Cecil Flenicken, International Paper Co. engineer from Mobile, Ala., discussed almost every phase of materials handling in the paper mill.

"Progress in materials handling," he said, "is still in its infancy. More efficient and versatile equipment must be designed and perfected. In five or ten years we'll have handling systems beyond our wildest imagination."

But Mr. Flenicken added a note of caution. Mechanization and automation, he said, are not always the answer to efficient handling. The idea of an overall plan and careful study of conditions came up. It may be, he said, that the product which best lends itself to mechanical handling can be systemized while the balance of material is handled as a special problem.

One possible system of the future, now under study by International Paper: A driverless tractor, operating on a path described by wires buried in the floor, which would pull a number of four-wheeler trailers loaded with pallets or counter rolls.

Mr. Flenicken said, with the proper layout, a tractor might follow a path from one department to another, delivering materials from one place to another on a complete circuit and doing several jobs along the way.

He discussed the recent trend toward warehousing of large rolls of paper, storing paper rolls on end rather than on sides to reduce space, lower cost, increase utilization. (See PULP & PAPER, March, 1958, "New Concept in Roll Handling," page 78.)



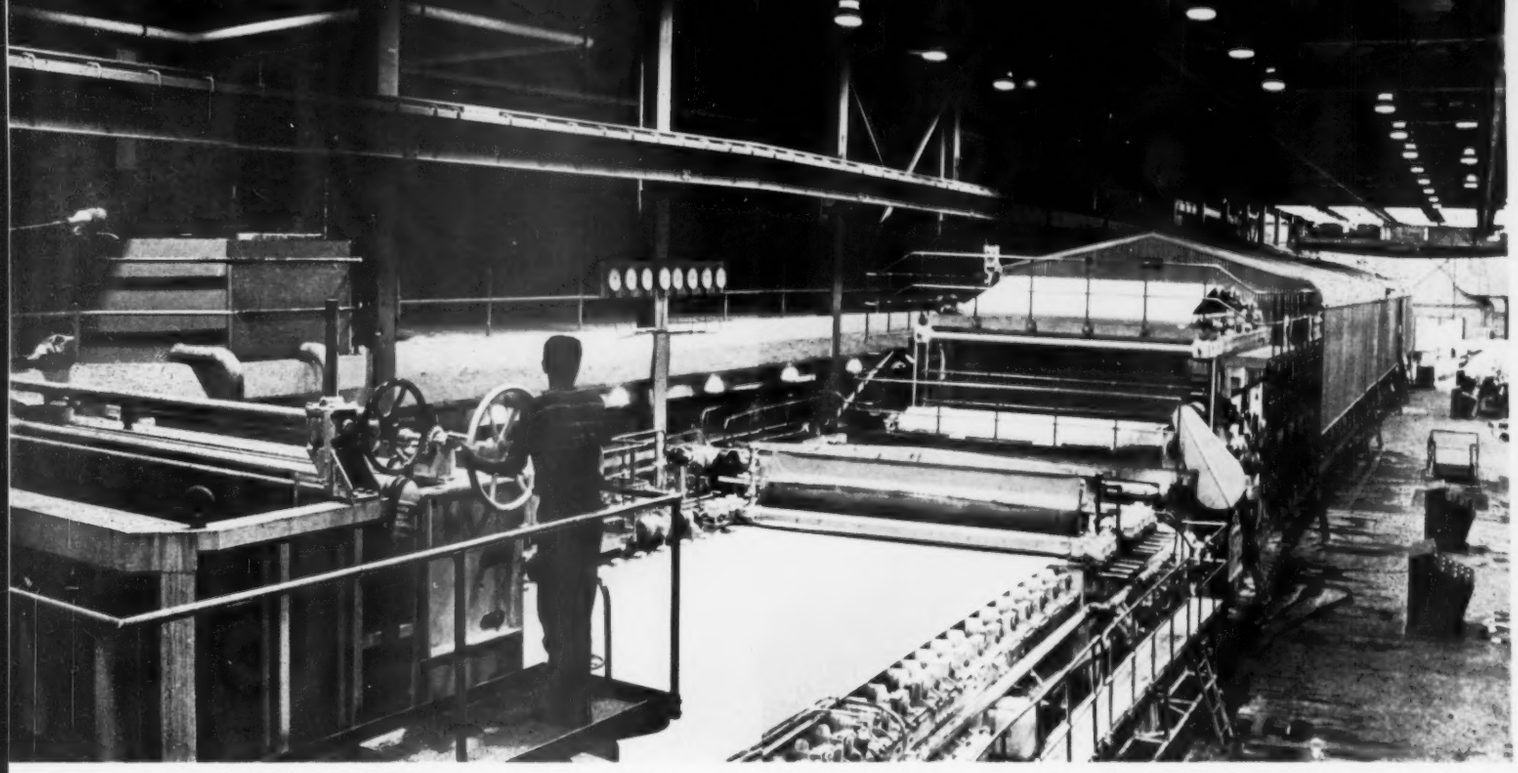
EQUIPPED WITH WIDE, STABLE CARRIAGE, Towmotor lift truck also has rubber tires. Floors are concrete with plastic compressive material, the result of experiments by Masonite to determine longest lasting material under weights like this. This Towmotor has 10,000 pound lift capacity.

How To Obtain Better Wooden Pallets

The "lowly pallet" was lifted a notch or two during the Georgia Tech short course by William H. Sardo, Jr., executive vice pres. of the National Wooden Pallet Manufacturers Association in Washington, D.C. Sardo pointed out that in 1956, more than $125 million was spent for wooden pallets in the U.S. and that frequently they are regarded as expendable material, to be bought as cheaply as possible, repaired only when necessary and thrown away when they become hopeless wrecks. Said Mr. Sardo:

"There are some practices followed by a few pallet manufacturers that can condemn pallets to a short life; the use of "chisel point nails to avoid predrilling, employment of drive screw nails with improper angle of thread, inclusion of deckboards less than 3½ in. wide. When ordering pallets be sure you include complete specifications in detail."

He added that neglect of pallets once in use can be one of the most costly practices encountered in materials handling. They are economical and easily repairable, he said. The new NWPMA technical pamphlet "Care For Wooden Pallets Can Control Maintenance Costs To You" gives information on simple maintenance and repair. ●



PACING THE GROWTH in Canadian fine paper consumption is this 160-in. wide paper machine designed to produce sulfite bonds at 1,200 fpm. Machine by Millspaugh; inlet by Valley Iron Works. This is . . .

Rolland's "Dream" Paper Machine

To get ideas for it, Rolland combed the world and backed up its design and specifications with market studies.

Overnight, production capacity at Rolland Paper Co. Ltd. has been doubled to 200 tons a day. It is a bold move strikingly reminiscent of one made some 75 years ago when founder Jean Baptiste Rolland, at the age of 66, decided to build a fine paper mill in Canada to rival the traditional quality of French papermakers.

A few years after startup, Rolland won the coveted gold medal award at Antwerp in 1885 for its Superfine paper. Later, it won the highest award at the Chicago World's Fair in 1893 and the Grand Prix in Paris in 1900. Over the years to come, Rolland was to receive many such honors.

The dream machine represents no Canadian blue-sky thinking. Behind it are some wide-awake, hard-headed studies. It began when customer demands kept Rolland's six machines straining at full capacity. But before a new machine could be added, there were important questions to be asked, and important answers to be obtained.

Canada Likened to U. S. in 1900...

Rolland's sales and sales promotion executives began to study the growth of fine paper production and consumption in Canada. Since 1917 when production was around 50,000 tons, the nation has produced fine papers in an upward spiral. In 1956 Canada produced some 300,000 tons.

Canada today has been compared to the United States in the early 1900's. But Canadians, ever more conscious of their growing stature in the community of nations, are in a hurry to close that gap. As they do, their consumption of fine papers should be startling.

These were some potentials considered and studied by Rolland.

Decision: to Build Dream Machine...

Perhaps this is not as radical as it seems, because as Robert M. Fowler, president of the Canadian Pulp and Paper Assn., says, "In the long run, standing in the year 1956 and looking ahead for 25 years—the dreamers are more apt to be right."

Printing press sizes influenced the machine width. Prime consideration was to achieve the best possible production in the smallest amount of space and yet leave room for expansion.

For more than a year Vice President and Production Manager Marc Rolland "commuted" between St. Jerome and fine paper mills in Canada, United States, England and France. Then he brought these ideas for consideration by the other members of the Rolland management team.

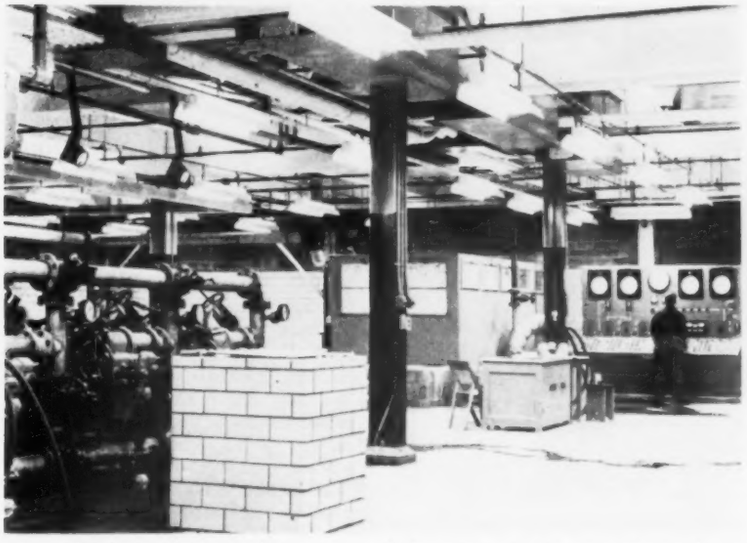
Used Small Models . . .

Interesting was the use of small wooden and plastic models of the proposed mill and equipment. Night after night, Marc Rolland carefully studied the models, moved them around over a layout of the proposed mill. In a sense it was a one-man chess game, but it was not one-sided. There were obstacles to overcome such as limited space and water facilities. In due time these were solved.

Within a year of ordering the paper machine from Millspaugh of England, it was in operation at St. Jerome in what amounts to a brand new mill alongside the original one.

Features of Rolland's Machine of the Decade

- A 290-ft. long Millspaugh paper machine designed to produce 10 lb. to 24 lb. (17x22) sulfite bond up to 1,200 fpm. Wire width is 160-in., trim 145-in..
- The Fourdrinier has a 95-ft. wire for better formation.
- The press section is conventional with 1st suction press, second plain press, third smoothing press.
- A special rubber watermarking press after the first press rolls. Each rubber ring is individually controlled.
- Considerable amount of controls; 11 console controls in the paper machine room. Centralized graphic control panel being added in supt's. office.
- Air-operated guide on the return wire; 2 shaking mechanisms on Fourdrinier.
- The horizontal broke conveyor is at the first press, is reversible, operates automatically when sheet breaks, has an 18-in. wide belt.
- The 11-unit sectional Vari-Vee line shaft drive with David Brown gears has a speed range of 660 fpm to 1,200 fpm.
- Vacuum dials on flat boxes are unusually large for visibility, are placed high on back side of wire.
- Dryers are three-sectioned, total 42 five-ft. rolls.
- Paper machine hood is insulated aluminum.
- Suction couch roll is 42-in. dia., has a special spiral drilling to reduce noise.
- The Valley Iron Works inlet has three rectifier rolls.
- Eight Lodding fuzz removers are on the first 8 dryers.
- The latest in automatic moisture and basis weight controls by Aquatel and Isotope Betameters.
- Two calenders are used, with arrangements for queen and one other roll to be heated.
- Ross-Grewin Economizer system.



FOR STOCK PREPARATION . . . push buttons, graphic control panels, no beaters, straight line, automated flow arranged to use much white water, less fresh water.

Stock Preparation—Makes Use of White Water

Principal raw materials are purchased pulps, sulfate, soda and sulfite.

Major equipment:

Four-section Jeffrey pulp conveyor including tilting units.

Clark fork-lift truck for moving baled pulp, clay.

E. D. Jones Hi-Lo Pulper with a 6,000 lb. charge capacity.

Stebbins tiled mixing chest, 18-ft. high by 14-ft. diameter. Takes a full Hi-Lo Pulper charge at 4.5% consistency.

Stainless steel rosin tank, 5-ft. high by 4-ft. diameter. Capacity: 450 gals.

Refiner reserve chest, tiled, 21-ft. by 14-ft. diameter, 4% consistency.

For refining: four Morden Machines, one E. D. Jones lava-filled Fibremaster. ("Lava filled" means that the plug is filled with lava [volcanic stone] instead of steel bars to ensure better hydration and fibrillation and less cutting of the fiber.)

Three-way DeZurik valves (11).

Three DeZurik enclosed consistency regulators (two in stock preparation).

Bauer Centri-Cleaners—16 primary, two secondary. All with eductors.

Foxboro magnetic flow meter.

Graphic control panel with 29 controls.

And . . . of course, two men.

Stock Flow . . .

Pulp storage (baled) is adjacent to the pulp conveyor and the fork lift truck does not have to travel far. About 16 bales of pulp constitute a full charge for the Hi-Lo Pulper.

A metal curtain is used to enclose the Hi-Lo Pulper to prevent splashing. Windows on the sides permit observation while the pulper is being charged and operated. Defiberizing time is about 15 to 20 mins. Pulp transfer to the mixing chest is about six minutes. Broke and rosin size are added automatically, controlled by push-buttons from the graphic panel. From the refiner supply chest, stock is channeled through a DeZurik regulator.

The refiners are arranged for a variety of operations: in series of five units; in series of two refiners, each functioning parallel; in two series, one comprising a Fibremaster and a Morden, the other comprising three Mordens.

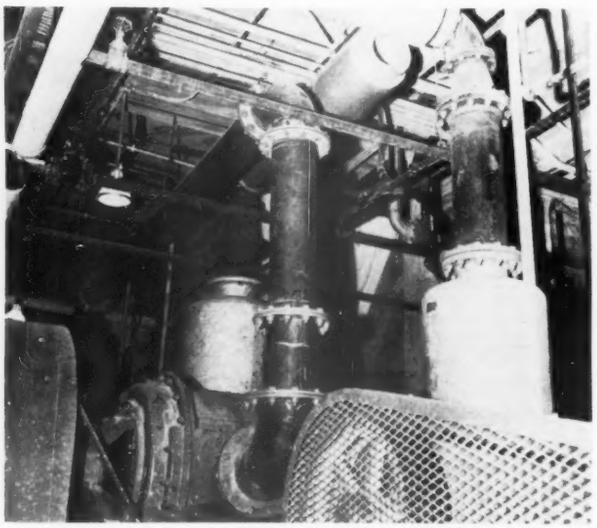
From the machine chest, stock is pumped to a second DeZurik and then courses to two Jones Standard jordans, in parallel, for final cutting. Each jordan has its own line to the regulator box on the mezzanine. A level control in each box acts on the stock in the jordan.

Leaving the regulator box the stock passes through a Foxboro magnetic flowmeter which controls the flow to the inlet of an Allis-Chalmers fan pump feeding the Bauer Cleaners. This flowmeter is a new concept. It creates a magnetic field with an intensity which varies with the speed of the liquid passing through. This is converted to give a reading in gpm on the control panel.

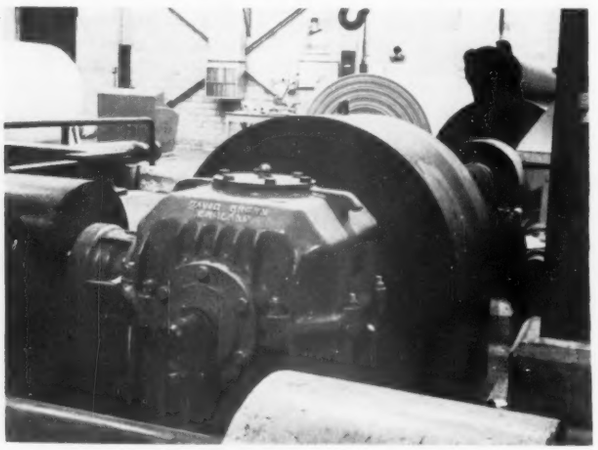
From the Centri-Cleaners stock is pumped by an Allis-Chalmers double suction pump to two Shartle Selectifier screens in parallel, then to the control valve to a header with 10 outlets feeding the Valley inlet.

Features of Paper Machine Operation

- All five Nash vacuum pumps have manifolds and silencers for noise reduction.
- Automatic broke repulping system uses a Liebeck (E. D. Jones) pulper, positioned under the calenders.
- Masson-Scott rewinder-slitter (now being made in U.S. by Langston), has special suction device to spread the sheet, eliminate wrinkles, provide more uniform rewinding; also has special type slitters.
- Masson-Scott rotary cutter has overlap delivery, shadow ream marking. Cutter table, rather than layboy, rises.
- Weigh sampler being installed to totalize amount of fiber loss to sewer.
- Mill interior is air-climatized and the finishing room is humidified.
- Automatic Seybold trimmer, 105-in. wide, is first of its size in Canada.
- Rolland-designed ream conveyor has electric eye device to deliver paper to trimmer without manhandling.
- Rolland-designed special wrapping table has enclosed false bottom into which blower is hooked. Holes in table provide air jets for easy handling of reams. Use of blower is cheaper, provides clean air.
- All piping is stainless steel.
- Flow of mill has been arranged to use as much white water and as little fresh water as possible.
- Paper machine room is serviced by a 20-ton overhead Provincial crane; a 5-ton crane in the finishing room handles jumbo rolls.



FOR QUIETER OPERATIONS . . . manifolds and silencers on suction and vacuum pumps.



FOR BETTER SPEED CONTROL . . . 11-unit Vari-Vee drive with David Brown gears.

Operation of Paper Machine Highly Centralized

Rolland aimed to centralize as many starting-up devices as possible and as a result operation is predominantly by push-buttons. The few manual adjustments are for sluice and draw, feeding or threading the machine, etc. Adjustment of drums is also by push-button.

From the main control panel alongside wet end, the machinetender pushes a button to start the stock coursing through the machine.

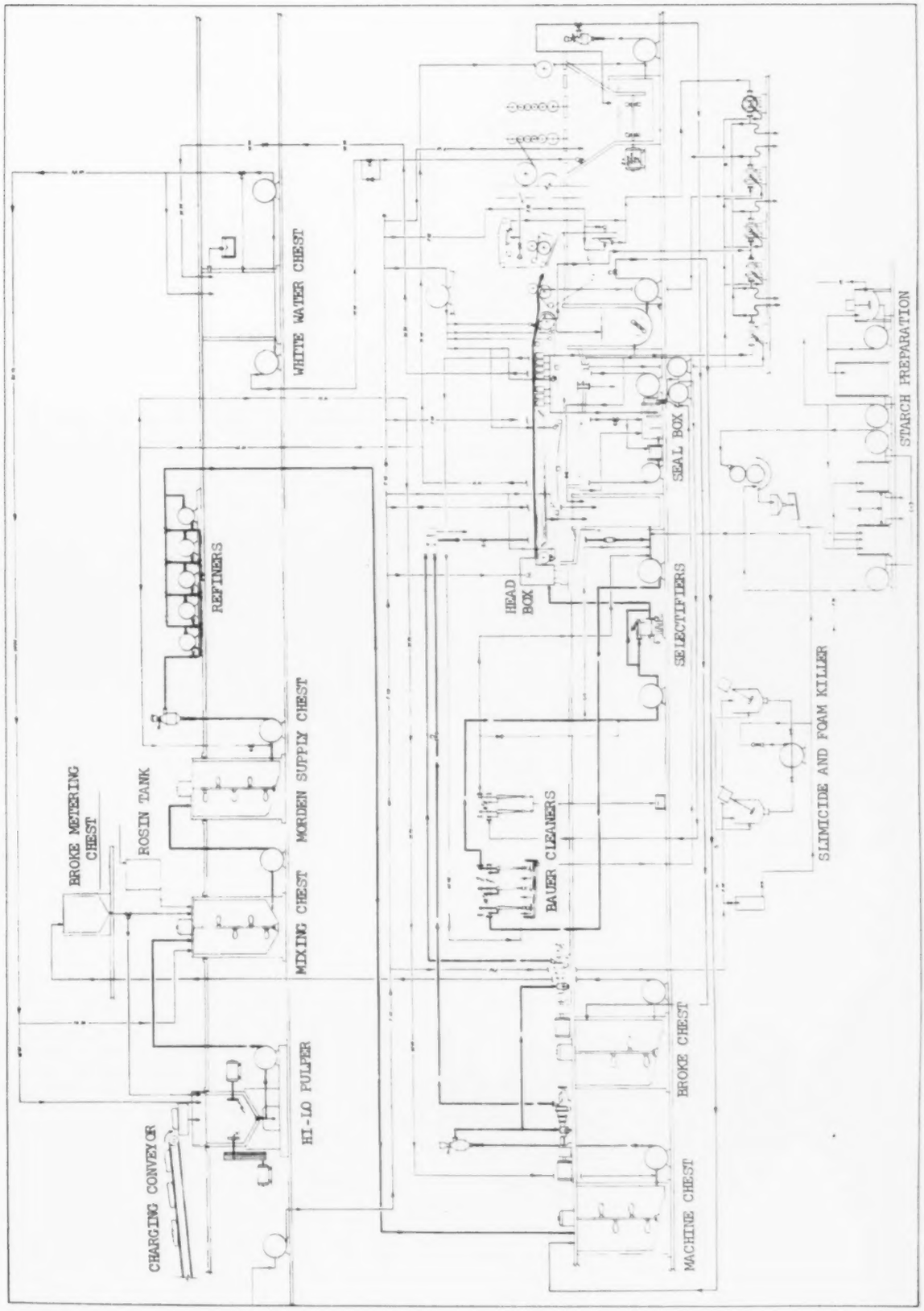
Along the machine length are 11 control consoles, each with Bailey recorders, Foxboro controls, Panalarm units on three control panels, and break indicator systems at each section.

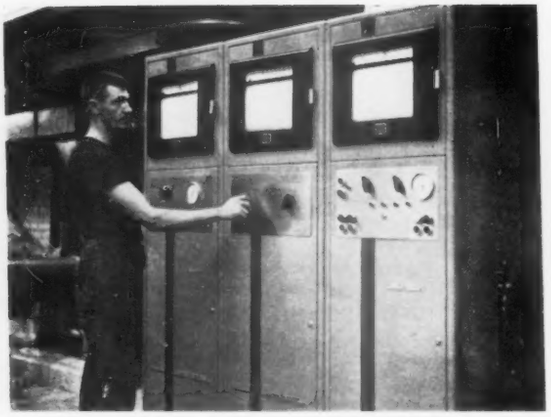
The noise level of the new machine is about the same as any of Rolland's smaller machines as a result of the special drilled hole patterns on the suction roll and the manifolds and silencers hooked onto suction and vacuum pumps.

The pitch of the wire table can be raised 1.5-in. or lowered 4.5-in. On the return wire is a Gilbert & Nash hydraulic wire guide with a constant correction rate, regardless of machine speed. It reacts instantaneously with

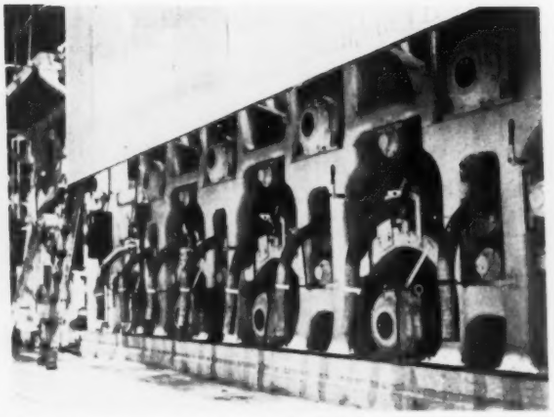
AN INSIDE LOOK at Rolland's dream paper mill is shown on the flow diagram on the facing page. Included are details of stock preparation phases, refining, cleaning and delivery of stock to paper machine chest.

Also shown are auxiliary equipment serving paper machine operations such as size press preparation, chemical flow, vacuum pumps, white and fresh water flow and broke system.


WHITE WATER CHEST
REFINERS
BROKE METERING CHEST
ROSIN TANK
MIXING CHEST
MORDEN SUPPLY CHEST
HI-LO PULPER
CHARGING CONVEYOR
HEAD BOX
SEAL BOX
SELECTIPIERS
BAUER CLEANERS
BROKE CHEST
MACHINE CHEST
SLIMICIDE AND FOAM KILLER
STARCH PREPARATION



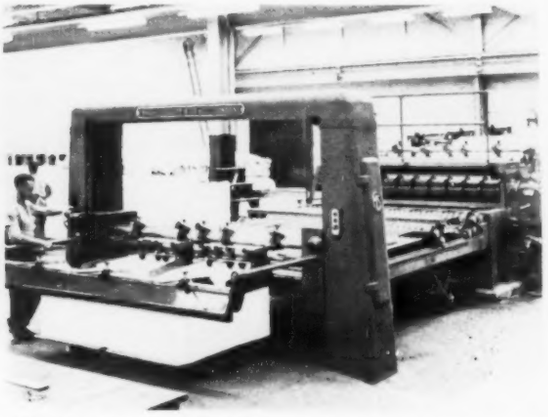
FOR MOISTURE AND WEIGHT CONTROL . . . improved models of Aquatel and Betameter.



FOR IMPROVED DRYER OPERATIONS . . . 8 Lodding fuzz removers.



FOR WRINKLE-FREE ROLLS, this improved Masson-Scott slitter rewinder with suction bar.



OVERLAP SHEETER features shadow ream marking and rising cutter table (instead of layboy).

no time lag for correction.

Dials for the flat boxes are unusually large for easy visibility and are mounted high on the back side of the wet end.

The couch pit has an automatic level control and in event of a sheet break, when the rate of broke entering the pit makes normal capacity of the pump insufficient, the valve sends a signal to the motor of the pump to automatically increase speed from 900 to 1,200 rpm. When the couch pit level returns to normal, the pump is reset automatically to its usual speed.

The horizontal broke conveyor is also automatic, going into action as soon as broke begins to accumulate at the first press. From a console, the machinetender can direct broke either to the back side to a chute leading into the couch pit or to the front side to a broke cart. The conveyor stops as soon as machine operation returns to normal.

When the sheet breaks, a knock-off shower starts at the first press to channel broke to the couch pit.

Contrary to Rolland's other machines, where white water is recirculated in a mixing box at the rear of the wire, machine No. 7 uses a tiled wire pit for this. All white water coming from the stainless steel pans under the table rolls are brought to the pit under the wire. Tile baffles disentrain air. In the center is the white water well, kept full at all times.

The press section is conventional. A Foxboro Stakload is used to raise or lower the press rolls. Of special interest is the positioning of the rubber marking rolls after the first press instead of the second. Rolland believes it results in a better watermark impression. The sixteen 10-in. diameter rubber marking rings are individually controlled from an adjacent control console. Dodding oscillating doctors are used on all press rolls.

The dryer section has three units with a total of forty-two 5-ft. diameter dryers. Each section has its own control console. Between the second and third dryers there is room for a breaker stack or for two additional dyers.

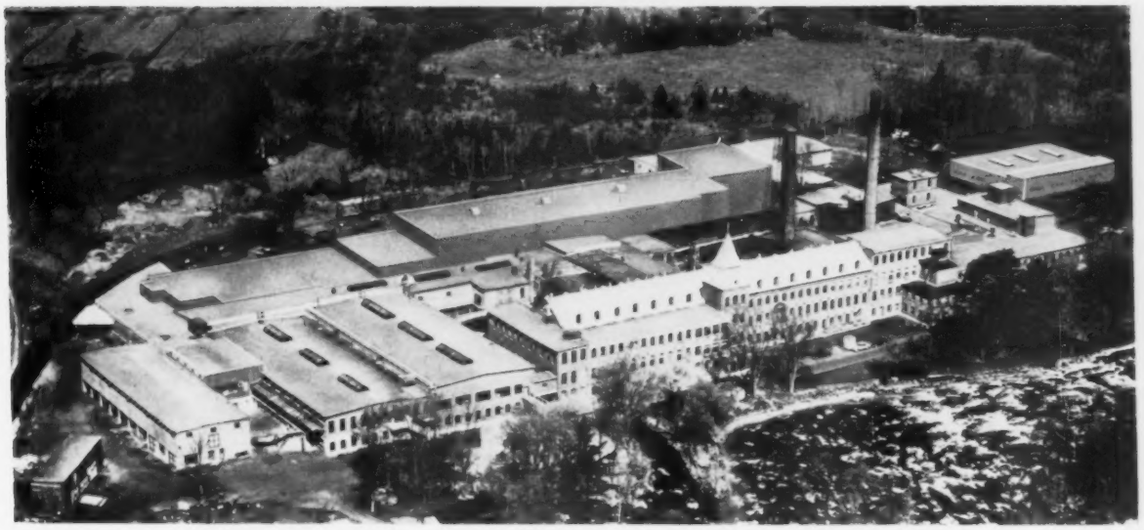
Finishing Has New Features . . .

The finishing room has three interesting features. The Masson-Scott overlap sheeter has shadow ream marking. The cutter table, instead of the layboy, raises up.

From the sheeter, the reams move along a slat-type conveyor designed by Rolland. At end of its travel, an electric eye stops the conveyor. Then the trimmer man by push-buttons activates a pusher bar which transfers the reams to a delivery table with another pushbar feeding the trimmer.

The Seybold 105-in. trimmer is the first one of its size delivered in Canada.

An interesting innovation by Rolland is the wrapping table for trimmed reams. On its surface are small air holes. There is a false bottom fitted onto the table to which a blower is hooked. Rolland likes this system because there is no danger of oil contamination of the sheets.



STUDY IN CONTRASTS: Rolland's new paper mill (behind the old mill) stretches its slim and windowless lines alongside company's original mill at St. Jerome, Que.

Rolland—Its History and Growth

Founding . . . It takes a lot of courage to begin a new business where others have failed—and especially when you're in your sixties. But that's exactly what founder Jean Baptiste Rolland did in 1882.

But to go back a bit. This son of a French Canadian farmer moved to the city in his youth to be an apprentice in a printing shop, later ran a printing plant and at 27 opened a book and stationery store. He was later joined in business by his two sons.

For many years the elder Rolland often wondered about producing his own papers in Canada instead of importing them from France. The idea persisted and he studied many mill sites. But it was a Roman Catholic priest, Cure Labelle, who wanted to attract industry to his pastorate at St. Jerome, who actually precipitated Mr. Rolland to make the step.

His son, Stanislas J. B. Rolland, went to Holyoke, Mass. to learn the art of fine papermaking. Incidentally, a familiar name in papermaking crops up here. E. D. Jones of Pittsfield, Mass., was retained to plan the mill. Today, some of the original Jones papermaking equipment is still in operation.

To visit the mills of Rolland is almost like visiting the Old World. The company firmly believes "quality must never be sacrificed to speed nor tradition of excellence to quick and easy profits."

"A big contribution to our smooth operation depends entirely on human relations," says Lucien Rolland, president. "This is a relatively small company composed of employes whose families have been craftsmen and papermakers for generations. We do prefer to hire their sons in our mills. Labor turnover is small. We spend less time to train employees."

Rolland has one employe, 74 years old, who has been with the company 60 years and is still considered to be an active employe. There are 30 men with 25 years service and more; 15 with 30 plus; 15 with 40 plus and three with 50 or more years.



"Quality must never be sacrificed," says Lucien Rolland, President, Rolland Paper Co., Ltd.

To celebrate its 75th anniversary in 1957, Rolland produced a special watermarked sheet of 100% rag bearing an almost life-size image of the founder. Students of the fine art of watermarking will treasure this as a collector's item.

Features of New Mill

The "L" shaped mill is arranged for straight line flow.

Entire mill interior is tile-lined.

Extensive use of fluorescent lighting.

Mills and Grades

Mills: Two—at St. Jerome and Mont Rolland, Que.

The St. Jerome mill is some 32 miles north of Montreal and is the original mill of the company. It has five paper machines, including the new No. 7.

The Mt. Rolland mill, about 17 miles upstream from St. Jerome on the same North River, dates back to 1908. It has two paper machines.

Manufacturing Grades . . . A full range from all rag content papers to all sulfite grades include bonds and ledgers, duplicating papers, lightweight and airmail papers, posting machine paper, text and book papers and offset papers.



Keynoters at Coast Meetings

(From left) Dr. S. L. RANKIN of DuPont, keynote speaker of Oregon sessions; J. F. HAVARD, Fibreboard, managements' speaker for all three state meetings; JAMES A. WILSON, Publishers' Paper, presenting labor-management award to ROBERT E. MARCH, Coos Bay Pulp, for lowest 5-year frequency rate in Oregon.

Trophy Winners

Washington Governor's Trophy (1 year)—Rayonier Inc., Port Angeles, Wash.

Oregon Governor's Trophy (1 year)—Fibreboard Paper Products, Portland, Ore.

California Governor's Trophy (1 year)—Fibreboard Paper Products, West Antioch, Calif.

Otto R. Hartwig Award (1 year—All Mills)—Fibreboard Paper Products, Portland, Ore.

Labor-Management Award (5 years—All Mills)—Crown Zellerbach Corp., Port Townsend, Wash.

Labor-Management Award (5 years—Washington)—Crown Zellerbach Corp., Port Townsend, Wash.

Labor-Management Award (5 years—Oregon)—Coos Bay Pulp Corp., Empire, Oregon.

Labor-Management Award (5 years—California)—Container Corp. of America, Los Angeles, Calif.

Safety on West Coast Gets New Impetus from "One Is Too Many" Approach

● The annual round of two-day 12th annual labor-management safety conferences recently held by 45 mills supervisors and union leaders in California, Oregon and Washington were devoted to developing attitudes and techniques to achieve "accidents zero."

Immense values have accrued from reducing pulp and paper injury frequencies on the Pacific Coast by 85% since inception of this labor-management approach to the problem (from 39 frequency in 1945 to 5.5 in 1957). Now employers and employes are determined to attain a more difficult achievement: perfection. "One is too many," is the slogan.

Consideration of ways this can be accomplished occupied sessions in each state. Complete acceptance of safe attitudes—safety psychology—loomed as a principal factor. Dr. S. L. Rankin, medical supervisor of DuPont pigments dept., Wilmington, Del., who delivered the keynote address at the Oregon session, said:

"Until we train or discipline ourselves to this we can't possibly achieve the success that could be ours. . . . Current regulations, rules, traffic codes are important; but an individual trained, thinking properly, cognizant of his responsibilities and willing to accept those responsibilities can work wonders, yes miracles."

As a way of life, Dr. Rankin says, safety psychology makes for better living at work, at home, on the highways—everywhere. "It makes one thoughtful instead of thoughtless, careful instead of careless; polite instead of rude. It distinguishes between bravery and foolhardiness. It makes for a fuller and happier life. Life and safety are inseparable."

Pacific Coast Assn. of Pulp & Paper Manufacturers and the two unions—Pulp, Sulphite & Paper Mill Workers and United Papermakers & Paperworkers—sent delegates to the meetings.

How are Successes Achieved?

Speaking for management address J. F. Havard, vice pres. of manufacturing for Fibreboard Paper Products, said the philosophy of "locking-in safety" has become a prime factor in his firm's safety accomplishments. He says this locked-in approach means "engineering safety directly into new plants," "locking safety into the consciousness, habits and skills of our people," "locking safety into management," "inseparably incorporating safety rules into over-all (operating) instructions," "lock-in safety discipline."

The Washington state keynote address, given by George W. Collins, manager of DuPont Works, DuPont, Wash., developed safety-program factors which have proven successful. The DuPont organization, involved with industrial safety over 150 years, achieved a record injury frequency of 0.60 in 1952.

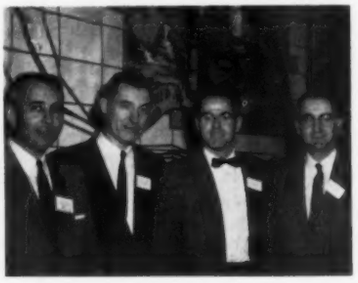
Keystone of this program, according to Mr. Collins, is the duty of everyone, from top management through all levels of the organization, to strive for safe working conditions.

Important contributing factors: Safety is engineered into plant projects at the blueprint stage; plant managers assume complete responsibility and extend this responsibility to supervisory personnel; safety supervisors serve as consultants to the line organization.

"One Is Too Many" is also the title of a new full-color 16 mm. safety film produced by the association. It rated as "tops" by delegates viewing the premiere showings.

California Meeting . . .

A total of 15 California pulp and paper mills, and 5,000 employes were represented at the conference of 125 delegates in San Francisco. In California the accident rate has been brought down from 29.16 to 7.18 since 1946.



At California Meeting

(From left) J. C. YOUNG, industrial relations supervisor, Kimberly-Clark, Fullerton, Calif., R. M. GILMORE, general safety supervisor, Rayonier, Hoquiam, Wash., A. B. BARNES, safety engineer, Fibreboard Paper Products, Emeryville, Calif., and GEORGE LAHUSEN, general safety supervisor, Crown Z, Portland, Ore.

George Christopher, mayor of San Francisco, welcomed the group.

R. J. Menshausen of Container Corp. of America pointed out that with an accident rate of 7.18 California had a long way to go. He said that in 1956 there were 18 industries with lower frequency rates than the combined tri-state rate of 6.48 and 28 industries with a better record than the California mill rate of 9.38. He said that progress in all three states has saved life and limb of an estimated 13,000 since 1945.

"Let's Pretend," an experience in blindness, was presented by A. B. Barnes, safety engineer, Fibreboard Paper Products Corp., Emeryville, Calif. Blindfolds were given to the audience and they were asked to perform certain tasks blindfolded.

Joseph O. Julson, resident manager, Weyerhaeuser Timber Co., pulp division, Springfield, Ore., told the meeting that safety was a three legged stool. One leg is that nobody likes pain, hence hates to get hurt; another leg is that no supervisor wants to see anyone get hurt; the third leg is that all take pride in seeing the accident rate go down and the glue that holds the three legs together is that labor and management both want good safety procedures in their plants. ●

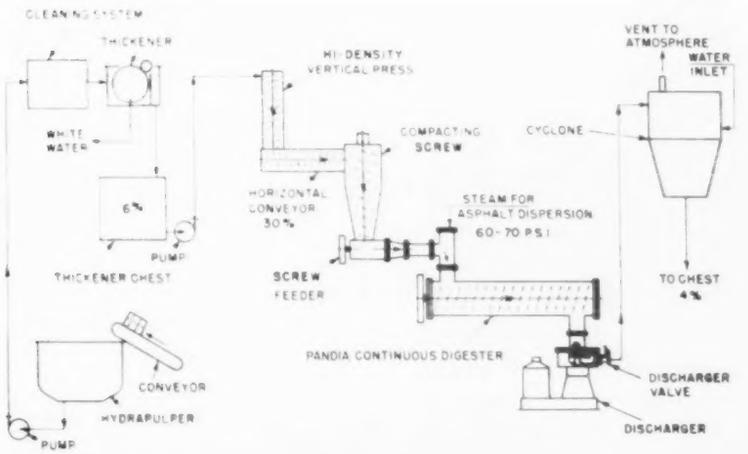
Comments of Panelists On Enforcement of Safety Rules

John Sherman, vice pres., Pulp, Sulphite & Paper Mill Workers, Tacoma, Wash.: "Workmen should agree to use plant safety gear. It is for their own benefit."

R. P. Wollenberg, vice pres.-operations, Longview Fibre Co., Longview, Wash.: "It's better that a workman knows he will be reprimanded for every infraction than to be subject to heavy penalty for a subsequent infraction. Be impartial in enforcement and reprimands."

Al E. Brown, vice-pres., United Papermakers & Paperworkers, Portland, Ore.: "Anyone placed in a position of enforcement should have the wisdom of a competent judge. We must have in-plant enforcement by management. The unions have machinery to alleviate requirements of marginal, questionable equipment."

S. W. Grimes, managing director, Pacific Coast Assn. of Pulp & Paper Manufacturers: "Enforcement, fundamental to any successful accident prevention program, is the one area where least amount of effort has been expended. Superintendents and managers are just as guilty as the person committing the act if they allow it to be committed without correction."



Federal Paper Board operates first B-C dispersing system

NEW: Packaged Asphalt Dispersing System

● A new system for getting rid of the asphalt in waste paper is now in operation in the Steubenville, O. board mill of Federal Paper Board Co. By eliminating the problem of asphalt dirt, the system improves the appearance of the finished board products which Federal makes for conversion into corrugated boxes and other packaging items.

The system accomplishes the dispersion of asphalt with comparatively low horsepower and steam consumption and without disturbing the physical properties of the finished sheet.

A complete Black-Clawson Asphalt Dispersing System is composed of a Hydrapulper, ragger, junk remover, pumps, liquid cyclones, thickener, dewatering press, Pandia Chemi-Pulper continuous digester, Pandia discharger, and cyclone collecting tank.

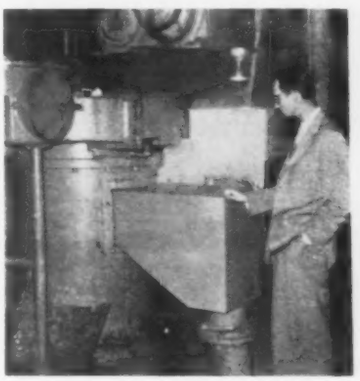
How It Works . . .

A compact unit operating continuously, the system begins with the removal of foreign material of high specific gravity by the Hydrapulper, ragger, junk remover and liquid cyclones. Stock consistency is then increased by thickeners and ultimately raised to 30% in the dewatering press ahead of the Pandia continuous digester.

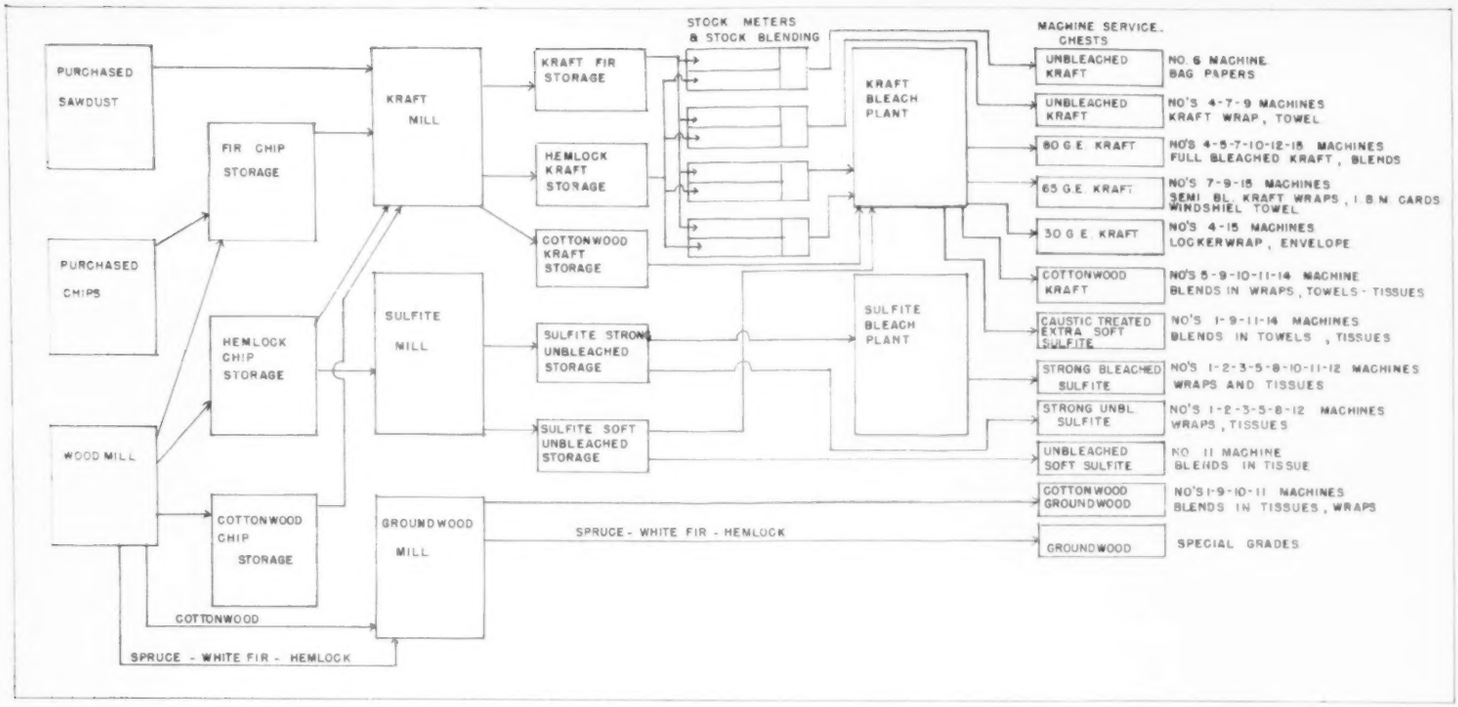
In the digester, steam is introduced to raise the temperature of the stock to the melting point of the asphalt, thus facilitating its dispersion.

From the digester tube the stock enters the Pandia discharger through a restricted orifice that can be accurately regulated. The orifice serves to maintain pressure in the tube by minimizing the steam loss at the discharge point. At the same time, a sudden pressure drop occurs as the stock is forced through the orifice. The explosive effect of the sudden drop further disperses the asphalt and serves to separate the fibers.

Finally the stock is collected in a cyclone tank, vented to the atmosphere, and regulated for consistency and temperature by water showers. ●



A. K. FREAS, mgr., of Federal Paper Board Co., Steubenville, Ohio mill, checks overflow box of the high density press of new Black-Clawson packaged asphalt dispersing system.



Coordinating Flow...

of 12 different pulp grades to 15 machines...

some grades made from as many as four kinds of pulp

● Around Crown Zellerbach's Camas, Wash., mill, people call Milton Franklin the busiest man in town. He plans and regulates the flow of 900 tons of pulp a day—12 different grades—to the mill's 14 paper machines, which produce everything from facial tissue to linerboard, as well as to a Kamyr pulp machine which furnishes bleached and unbleached pulps to other member mills.

Compared with Mr. Franklin, Camas pulp coordinator, the chef at the Waldorf-Astoria has an easy job.

Three basic kinds of pulp are produced at Camas: sulfite, kraft and groundwood. But, when segregated as to wood species and methods of cooking, the plant has seven different kinds of unbleached pulp. Since the demand for bleached grades is becoming more acute all the time, the mill is operating four separate bleach systems, including a new plant of 300 tons capacity.

Twelve different grades of bleached and unbleached pulp are furnished to the paper machines with varying blends on each machine, some made up of four different pulps.

There are 45 stock chests between the pulp mills and the beater room, and if all were full it would provide from 12 to 24 hours supply for the paper machines.

Communication is a Big Problem...

It is perhaps the biggest single problem in stock scheduling. All departments must know a week in advance what is required of them in a general way, and must have a positive schedule for each 24 hours. The information as taken from the machines is checked carefully with the production planning department to determine if the program as previously planned is to be followed.

Frank Mandic, paper machine production planner, must tell Mr. Franklin each day what he hopes to produce on the paper machines. Pulp requirements for the next 24 hours are calculated in order that any irregularities may be presented to a quality meeting held each day at 11:40 a.m., attended by the management and heads of operating departments. The machine schedule for the next 24 hours is discussed, along with quality problems that have arisen in the past 24 hours.

The final program is put in writing and delivered to the operating departments with the exception of the wood mill and kraft mill, which go through the regular mail channels. The telephone and telautograph are used a great deal in discussing with various supervisors the problems that must be met each day.

Many Departments Must Know . . .

Wood mill supervision must know the digester schedules of both the kraft and sulfite mills. The kraft mill runs to capacity all the time, but must know the volume needed of each wood species cooked.

The sulfite digesters and acid plant

must have a cooking schedule to follow. The kraft bleach plant needs a complete schedule of grades to be run and the necessary sequence. The kraft screen rooms need to know the blends of hemlock and fir to be used in each grade at the bleach plant and the two unbleached kraft service chests serving the beater room. The yard is notified as to how much pulp will be repulped each day. The beater room receives this same information along with any changes that may be necessary in the grades of pulp in the various service chests.

The sulfite mill foremen, the key men in seeing that the schedule works, must have all of the above information along with any comments or further knowledge of the stock needs.

The communications as discussed must work, for any one department not having the correct information can throw the whole schedule into disorder.

A Mathematical Problem . . .

The actual scheduling of the pulp is theoretically a mathematical problem. When worked in the proper sequence, it should always give accurate results, provided there are no mishaps. Many items may upset a schedule. A change in machine orders or a paper machine breakdown at a time when the system is full causes much concern as to what to do with the pulp. Another problem is a breakdown in the pulp mills. With as much equipment as is involved this occurs occasionally, necessitating changes in the schedule even to changing grades on the paper machines. A mistake in timing the stock flow through some of the 45 chests can also cause trouble.

The first department to schedule is the kraft bleach plants where up to nine grade changes per day are necessary in order to meet requirements with existing storage facilities.

The scheduling of the kraft bleach plant provides information so that the kraft mill production can be properly distributed, and if necessary supplemented by outside kraft from yard storage.

The need of always having some empty chests is as important as having several full ones.

The Kamyr is programmed from the current orders and the availability of pulp, the paper machines being taken care of first.

The sulfite mill digester schedule is planned from the paper machine and Kamyr demand.

The sulfite mill foreman takes over from this point and keeps close track of stock inventories and makes any necessary changes to meet whatever emergency arises.

Picture Story of Camas Production Flow



Pulp Coordinator MILTON FRANKLIN (left) and Production Planning Supervisor FRANK MANDIC (right) work out schedule for next day. . . .



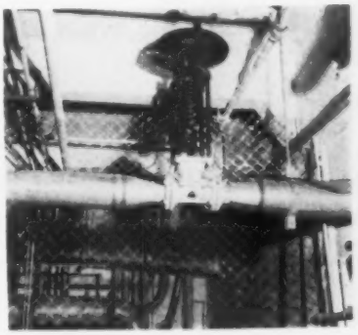
From 400-unit silos chips go to mills by belt transport. . . .



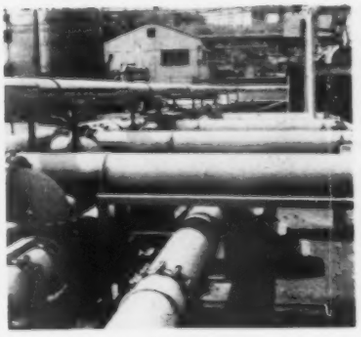
Rotary feeder transfers hemlock chips from No. 5 silo to 4-FT belt enroute to sulfite mill. (During 8 years of operation this belt has carried estimated 2 billion FBM of wood in chip form). . . .



Impco stock meters for blending pulp stock, in kraft roundscreen room, deliver unbleached fir and hemlock pulp at controlled rates to Stebbins-tiled chests for No. 4, 6, 7 & 15 machines. . . .



Venturi-type flow controller, two of which blend groundwood and other fiber species in stock chest supplying Kamyr pulp dryer with special-blend pulps for CZ machines in other market areas. . . .



Roof-mounted piping of segregation system for unbleached pulp.

Byron Weston Keeps Trucks Busy

Versatility is key to saving with electric units

● Industrial truck purchases are demanding more versatility. They want their trucks to have a wide range of assignments. This is especially true in pulp, paper and paperboard mills. This is one of the five biggest users of industrial trucks among all industries.

An example of versatility is at the Byron Weston Co., Dalton, Mass., now a division of Crane Co. The Byron Weston firm, manufacturer of paper for business records, purchased three Lewis-Shepard trucks with an eye toward present and future needs.

One is a Model E electric fork lift operated from stand-drive position. Instead of conventional forks, it has a Lewis-Shepard master universal clamp. To pick up non-palletized loads, the operator first straddles his load with the clamp. He then hydraulically "clamps" the load, and drives off with it. The clamp will handle skids and pallets of varying widths and can pick up non-palletized steel drums by the rim.



STACKING WOODPULP in storage at Byron Weston by electric fork truck with L-S master universal clamp.



OPERATING IN 6-FT. AISLE, cotton fiber paper is deposited in rack by hydrafork.

At the Byron Weston mill, this truck handles non-palletized 100-lb., 60-in. long bales of rags, bales of woodpulp and steel drums, besides palletized bags of sizing, fillers and chemicals. If not needed in the receiving room, the truck is used to transport "half-stock," cotton linter pulp, woodpulp and chemicals in the production area. It is also occasionally pressed into service in the shipping department.

A Model MNH electric tiering truck handles finished product warehousing, high stacking Weston papers to the ceiling in racks. This truck operates in aisles only 6-ft. wide, is equipped with a hydrafork attachment. It is also operated from a stand-drive position.

To pick up goods, forks are hydraulically extended into the pallet and the load lifted over the load wheels. After the forks and load are retracted, the truck travels to its destination. When placing a load in racks, forks are extended until the load is in proper position, and the load is dropped and forks retracted from the pallet. Multi-sized pallets are no problem.

The third truck, a Lewis-Shepard JackStacker "walkie," removes finished goods from storage and transports them to outgoing freight carriers. Also used to unload incoming carriers, it is operated from a control handle while walking along with it. It can maneuver in 6-ft. aisles. Because of its light weight, it can enter all types of carriers. Despite this, it has a 4000-lb. capacity. The two rider-type trucks have a 2000-lb. capacity.

All three trucks are in operation during Byron Weston's 40-hour work week. After each 8-hour shift, truck batteries are recharged in the plant.

Byron Weston chose electrically-powered vehicles because they were to be used indoors, are clean, quiet operating unit and minimize fire hazard.

Power costs total $.98 per 8 hr. day for all three trucks.

The trucks replaced manual handling methods, saving 2500 manhours per year. Also there is a 20% saving in storage space, says Winthrop N. Gutmann, Byron Weston's warehouse supt. Principal reason for savings he credits to their versatility—trucks are kept busy. ●



"WALKIE" TRUCK is light enough to deposit load right in truck, can carry and high stack 4,000 lbs.

Hooker-OldburyPlant in South Expands

Expansion of the Oldbury plant of Hooker Electrochemical Co. near Columbus, Miss., to produce additional sodium chlorate, will be completed about July 1, 1958 and will bring the total investment value there to about $6,000,000.

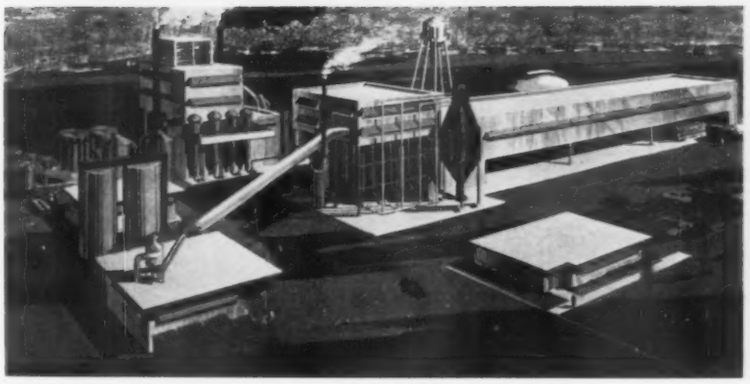
This is the second of two expansions since the Southern plant went into production in 1954 with an initial capacity of 12,000 tons per year. About 5000 tons was added to capacity late this summer, and an additional 5000 tons per year will now be made available, raising the total annual capacity to 22,000 tons. The Oldbury Division is the nation's largest producer of sodium chlorate.

Much of the sodium chlorate production from the Columbus plant is sold to the pulp and paper industry to make chlorine dioxide.

The Mississippi plant, which employs 50, is located six miles south of Columbus and about 80 miles west of Birmingham, Ala., with a mile of frontage on the Tombigbee River whose waters reach the Gulf of Mexico at Mobile. Eleven acres of the 465-acre site are currently being used.

The plant, managed by Harry R. Oswald, began producing sodium chlorate in 1954. Sales for the plant will be handled from Hooker's sales department headquarters in Niagara Falls, N.Y., by Robert E. Wilkin, vice pres. and director of sales; John S. Coey, mgr. of Eastern sales; Fred H. Berggren, product supervisor—chlorate chemicals (including sodium chlorate); and James E. Ferris, product mgr.—inorganic chemicals (including phosphorus pentasulfide).

Oldbury commenced production in 1897 while Hooker celebrated its fiftieth anniversary in 1955. The two merged companies employ approximately 4500 people.



Philippine Plant to Make Bamboo Pulp and Paper

Above is architect's drawing of a new $8,000,000 Bataan Pulp & Paper Mills, Inc., plant, being built at Bataan, Philippine Islands, to make pulp and paper from bamboo.

Designed and to be managed by Adamson Inc. of Los Angeles, Calif., the Philippine mill will have initial production of about 75 tons of paper a day, 50 tons of bleached and 25 tons of kraft. Occupying 60 acres, the plant site lies within five miles of the 30,000 acres of bamboo on which the firm has cutting rights from the Philippine government. A large part of the forest is within Bataan National Park.

Experimental work on bamboo paper done for George Adamson, president of Adamson Inc., at the U.S. Forest Products Laboratory, Madison, Wis., resulted in producing satisfactory samples of bond, litho and MF papers made from various combinations of bamboo and groundwood pulps. Financing of the new plant, Mr. Adamson said, is mostly with native Philippine capital.



GEORGE A. ADAMSON, president of Adamson, Inc., and technical director companies managed by brother, Alexander, in the Philippines.



BATAAN MILLS DIRECTORS AND STAFF (l to r): GODOFREDO K. DEL ROSARIO, secy.; RAMON ORDOVEZA, director; EUGENIO PUYAT, director; MANUEL DE LEON, director and treasurer; CARLOS PALANCA, JR., director and president; VICENTE RUFINO, chairman of board; ALEXANDER A. ADAMSON, director, vice president and general mgr.; PABLO LORENZO, director; GO HOC, stockholder; ALEXANDER SYCIP, director, and LUCIANO SALAZAR, attorney.

New Cold Caustic Pulping Process

Sprout, Waldron & Co., Inc. joins with the V. D. Anderson Co. in announcing development of a new continuous cold caustic pulping system. The new approach is continuous impregnation providing a system subject to precise control and furnishing a high yield high quality pulp at a lower caustic consumption than possible with batch type systems. Data on aspen, oak and mixed hardwoods have been obtained. Further details on request from Sprout, Waldron & Co., 130 Logan St., Muncy, Pa.

Will PASC Join Supts? Decides Against TAPPI

The Papermakers & Associates of Southern California, a long time industry group, has decided against affiliating with TAPPI, overriding recommendations of their special committee. Another committee is now studying the possibility of allying with the Superintendents' Assn.

About 50 papermakers and their friends listened to Dr. Dan B. Wicker of F. C. Huyck & Sons, who gave them a practical capsule education on felts. Dr. Wicker dwelt on the effect on felts of various percentages of synthetic fibres combined with wool. The occasion was the regular monthly PASC meeting in Los Angeles.

Bellingham Merger Called "A Natural," Won't Affect Puget Pulp's Customers

Stockholders' approval is anticipated in April for the merger of Puget Sound Pulp & Timber Co., one of the major producers of bleached sulfite pulp for worldwide markets; and its next-door neighbor in Bellingham, Wash., Pacific Coast Paper Mills of Washington, Inc.

Lawson P. Turcotte, president of Puget Pulp, and F. J. (Bill) Herb, president of the tissue producer, explained to PULP & PAPER that the merger will not alter an arrangement which has been in existence for over 30 years, whereby the pulp mill supplies the tissue mill with about 8% of its production. Both mills were built at about the same time—in 1926.

In other words, customers of Puget Pulp in this country and abroad will not be affected. Furthermore, PULP & PAPER is informed that the Pacific Mills' markets are entirely west of the Rocky Mountains and the products of Pacific Mills do not compete with products of Puget's pulp customers.

Both Mr. Turcotte and Mr. Herb explained the merger was "a natural" for the companies, separated only by a property line fence. The tissue mill, just north of the pulp mill, on Bellingham's waterfront, also gets steam from Puget Pulp. Pacific Mills makes MD, facial and toilet tissue, napkins and towels from Puget pulp. Its capacity is 90 tons a day of products.

Puget Pulp makes 480 tons of bleached sulfite daily—it is the second largest sulfite mill in the world (second to Scott's Soundview mill). It also makes 45 tons of paperboard, 9,000 gals. of industrial alcohol from sulfite effluent, and 50 tons of lignin products daily, when at capacity. Puget Pulp is half owner, with American Viscose, of Ketchikan Pulp Co.

There will be no changes in personnel. Directors of both companies have okayed the merger.

Pacific Mills was founded by J. J. Herb, father of F. J. and also of the president of Westminster Paper Mills in Canada. The elder Herb started in the industry at Kaukauna, Wis., and often has said his first job in the Thilmany Pulp & Paper Co. was on the end of a broom.

Natwick Pulp Process Planned for New Mill

An internationally patented Natwick-Noralyn semi-chemical continuous pulp cooking process is to be given its initiation at a pulp and newsprint mill in St. James Parish, south Louisiana, on the banks of the Mississippi River. Cottonwood will be principal species. Gum and willow may be used.

Leo L. Stack, president of the newly formed Noralyn Paper Mills Inc., with general offices in the Giddens Lane Bldg., Shreveport, La., told PULP & PAPER that a 280 acre tract is optioned there, with 1,700 ft. of river front. Another option is on an adjoining 300 acres which would extend river frontage to 3,500 ft.

John W. Natwick, who has wide experience in the industry and was with Bauer Bros., Jackson & Church, the U.S. Forest Products Laboratory, and who started his career in the Wisconsin mills, is vice president and operations manager of Noralyn. He is designer of the continuous digesters. Conventional batch digesters also are planned at the outset, while the new process advances from lab to pilot plant to commercial scale. Mr. Natwick's patents are registered in U.S., Canada, Sweden and Norway.

A newsprint machine is planned of either 150 or 250 tons capacity, but eventually printing papers and other products may be made, making full use of hardwood types.

Power will be supplied by Louisiana Power & Light Co. Process water will come from the Mississippi.

Brown & Root Inc., Houston, Tex., builders of other Southern mills in the area, are engineers. Longhorn Engineering & Construction Co., Sulphur Springs, Tex., are constructing buildings.

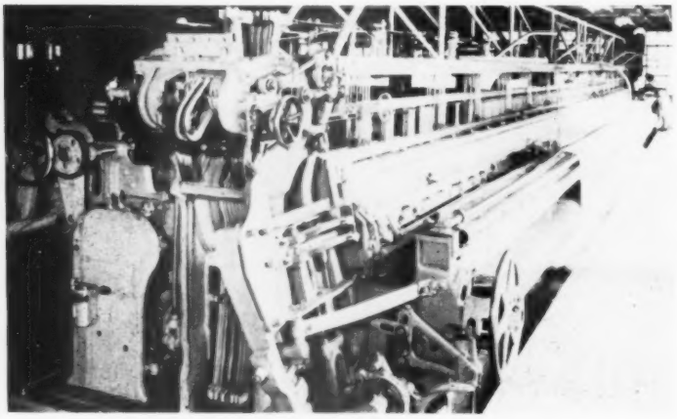
Syracuse Alumni Make Plans for School's 50th Year

Syracuse alumni in the pulp, paper and affiliated industries are making big plans to celebrate the 50th anniversary of the founding of the pulp and paper school at Syracuse, N.Y., in 1961. The school is part of State University of New York, College of Forestry, at Syracuse.

This was a subject of discussion at the annual luncheon of Syracuse alumni at Paper Week. Guest speaker was Frederic W. O'Neil, professor of pulp and paper technology, Syracuse, for the past 20 years, who discussed his sabbatical leave in Uruguay.

Announcement was made that the Empire State Paper Research Associates, which helped develop the chemigroundwood process and spurred use of hardwoods, will have a meeting in Amsterdam, Holland. The group now has foreign members and some research is being carried on in Amsterdam.

J. P. Casey, chairman of the pulp and paper alumni presided. Dr. J. C. (Pete) Barthel, American Cyanamid's technical director, is vice president. Maurice J. Landberge, manager of paper dept., General Dyestuff, introduced his associates in the honor class of 1933 on their 25th anniversary. Dr. E. C. Jahn, veteran of the Syracuse faculty, made a welcoming address. Lawrence K. Smith, vice president of Miller Freeman Publications and a founder of PULP & PAPER magazine, was an honor guest.



Giant Felt Loom Produces Wider Felts

Shuler & Beninghofen, Hamilton, O., producers of Hamilton Felts, recently installed a giant felt loom with over-all length of 74 ft., width of 8 ft. 3 in. and reed space of 726 in. It can produce felts wider than any now on order, anticipating the day when mills may require wider felts. The speed of the 62,200 lb. loom is 26 "picks" per min. The shuttle, weighing 5 lbs. 2 oz., travels from one end of the loom to the other in 1⅗ sec. Shuler & Benninghofen is celebrating its 100th anniversary.



Straddle Tables Increase Production

. . . and trim costs in trimming department

The Allied Paper Corp.'s King division is proving that with a little help from a new feeding device trimmers can trim more than paper. They can trim production costs, too.

It's all in the feeding, according to Allied's vice president in charge of manufacturing, James H. McClure. Pointing to recently installed lay-up Southworth Straddle Transfer Tables in King's Kalamazoo, Mich., plant, Mr. McClure explains:

"These tables are giving us greater efficiency, less idle time and more floor space. Trimming is a major part of production expense, and any saving at that stage shows up in the over-all profit picture."

The tables feed an 85-inch mill trimmer.

The advantage of the tables, and the source of their value as money savers, in the opinion of Herbert B. Johnston, vice president in charge of engineering for Allied, is "tons per hour."

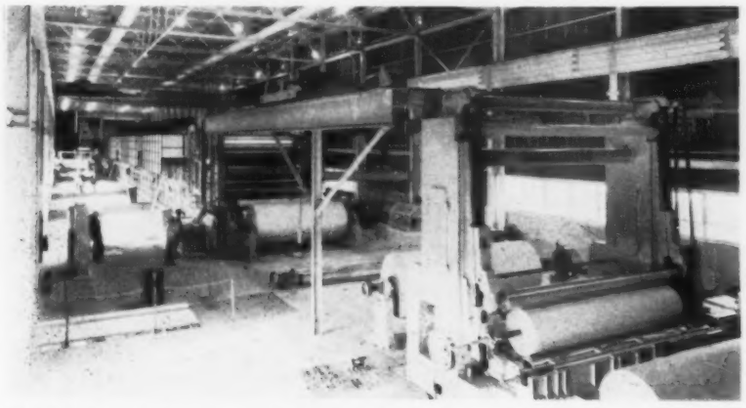
Boosted Work Capacity . . .

He says the feeders have boosted the trimmer's work capacity beyond anything possible with manual feeding. This means an increased turnout of "tons per hour" of paper and an appreciably higher production schedule, Johnston says.

The lay-up tables are self-loaded, reducing manual handling to a minimum. Straddling the trimmer, they feed their load rapidly and uniformly. Take-away tables reverse the action, carrying the trimmed paper on for re-skidding.

Another advantage of the table feeders, according to Mr. McClure, is that their clock-like precision helps production plans. With the automatic feeders, he explains, production can be predicted in terms of knife cuts per hour.

The Southworth Straddle Tables at Allied were the first installations. The table carries its load of sheets, to be re-trimmed, to the trimmer. As the operation takes off a lot to feed to the trimmer the balance of the load rises to the desired level (with layboy action). And the pile of sheets to be trimmed can be revolved with finger tip pressure to bring any of the four sides to the trimmer knife. As the lot of trimmed sheets comes from the trimmer it is re-stacked on another unit of the installation, and by foot pressure on a release lever it automatically returns to the starting operator where the trimmed lot is removed and the table reloaded with another lot to start the trimming process all over again.



Dierks Paper Company Going Full Blast

As this picture shows, the 150-ton-a-day Black-Clawson Fourdrinier at this Pine Bluff mill is now in full operation. The mill, owned by Dierks Forests, Inc., is backed up by a million-and-a-half acres of Southern timber. Machine trims out at 166 inches, has stainless steel open headbox, permanently cantilevered Fourdrinier, suction first and second presses and a smoothing press. Integrated kraft pulp and unbleached board mill will sell to converters.

S. O. S. Campaign Clicks at Bowaters

Fighting back against the rougher competitive and economic situation for paper products, Bowaters Southern Paper Corp. has launched a unique campaign among its employes calculated to keep the Calhoun, Tenn., mill going strong.

S.O.S. signs—meaning "Save Our Security"—are found around the mill. The company has laid its cards face up on the table, and taken employes into its confidence. The employes know what they are all up against and they are on their honor to give full value for their eight hours, to be diligent regarding quality of product and to save on materials.

Management at Calhoun says the plan is working. There is quite a little emotional drive behind the campaign, as the employes see and hear what is happening in some other industries.

Vic Sutton is vice pres./operations at Calhoun and John Skipper is industrial relations manager. They say the "S.O.S." campaign is one of the most gratifying employe morale builders they have experienced.

50-year-old Papermaking Patent

And why it is important today . . . it wasn't a "paper patent," that is sure



Supreme Court Decision Strengthened Patent Laws

By Jerome F. Fallon

● The Chief Justice's statement brought joy to five of the largest paper manufacturers in the country and despair to 13 others. The reaction-creating statement was the 1922 decision of Chief Justice Taft in the now famous patent case of Eibel Process Co. against Minnesota & Ontario Paper Co.

His ruling in that case has materially strengthened patents—and thereby fostered technological developments—since the reward of a patent has justified outlays in research for those developments. Eibel's patent was not a paper patent—one narrowly interpreted. Paper patents are narrowly interpreted because the inventions they cover never enter real practice. Eibel's invention was just the opposite—a pioneer invention.

Patents, although monopolies which are so contrary to American economics, have flourished in this country. They have been going strong since before 1800. In fact, they are especially provided for in the Constitution. The paper industry has had its share of pleasure and sorrow out of patents, and the somewhat obscure but lengthy history of patents can be epitomized by the Eibel case.



Mr. Fallon, Attorney . . .

. . . is a barrister who knows the pulp and paper industry better than most. He gained experience as an engineer and field representative for J. O. Ross Engineering Corp., serving mills in the Middle West and South while earning his law degree. He is now a partner in the Chicago legal firm of Dawson, Tilton, Fallon & Langmus.

Like so many inventions, William Eibel's device filled a long-felt want, and it was developed rapidly. The Chief Justice's summary of the inventor's labor was:

"What Eibel tried to do was to enable the papermaker to go to 600 to 700 feet and above in speed and retain a good product. Did he do it? Eibel was the superintendent of a paper mill at Rhinelander, Wis. Before August, 1906, he raised the pitch of the wire from 2 or 3 inches to 12 inches, and greatly increased the speed, with a satisfactory product, and in that month he applied for a patent."

It Took a Long Time . . .

Things were different then because Eibel got his patent on Feb. 25, 1907. Now the average time taken to get a patent is three years. However, once the patent was obtained, it ran for the same term as a patent granted last Tuesday (nowadays patents are granted only on Tuesdays)—17 years. Thus, when the Eibel patent was upheld by the Supreme Court, it had only two years to run. This is not as bad as it seems for the plaintiff, because damages can be obtained for infringements occurring as long as six years prior to the bringing of the suit. This suit was brought in 1917, so even in those days it took a long time to get things settled in the courts.

The patentee was faced with the bogey of the prior art—the things known by virtue of being published or used that make the step taken by the inventor appear to be an obvious one. The time-honored test for invention is whether the invention would not be obvious to one skilled in the art. Others had pitched Fourdriniers, but they did it for drainage, not to increase stock flow. This then disposed of the prior art.

Another Bugaboo . . .

Another bugaboo the patentee faced was the interpretation of his claims. This usually is a critical issue in every patent suit, since there is almost always a question of what terms mean. It all started when the courts became tired of construing every patent to see whether the accused structure involved the practice of the invention.

In the 19th century it was the practice to claim as the inventor's monopoly, "a device substantially as shown and described." But what was substantially the same?

So the Congress required each applicant to point out particularly what he thought was his invention in one or more claims. Eibel did this by saying that the pitch given the Fourdrinier was "high" or was "substantial." The defendant objected, of course, that this was indefinite; that it did not expressly limit the scope of the patent monopoly—but the court felt that the claim language was clear enough to teach the invention to one skilled in the art. This is another time-honored test, and so the patent withstood that attack.

Then . . . and Now . . .

Against the testimony of experts that the invention didn't work, or didn't work in the way the patent said it did, the five large paper manufacturers had a good rebuttal. One of the large manufacturers of papermaking machinery said at the trial that since 1907 he had not installed a single machine without the Eibel pitch. Commercial success is not indicative of invention, say the courts, but when the question of invention is in doubt, it may be persuasive—a reasonable man would undoubtedly feel that there is more likely to be invention in a device commercially successful than one that died on the vine for inattention.

Since 1922, patents have been handled a little more roughly by the Supreme Court—according to Mr. Justice Jackson in 1944—"the only valid patent is one the Supreme Court had not got its hands on." However, this does not deter inventors, since around 80,000 of them file applications each year. Of these, some 30,000 to 40,000 receive patents, and not a few of these are "paper" patents.

The Beloit Album



CROWN ZELLERBACH Corporation's new 264" Coated Book Machine, St. Francisville, Louisiana, is discussed at Beloit by *(l to r)* J. H. Solbakken, central engineering, Seattle; E. D. Beachler, vice president, engineering, Beloit; E. S. Skinner, chief engineer, Beloit; J. E. Goodwillie, vice president, Beloit; and E. H. Nunn, resident manager at St. Francisville.



CANADIANS get together at Beloit as G. L. Carruthers, president *(c)*, and J. E. Carruthers, vice president *(r)*, Interlake Tissue Mills, discuss a machine rebuild with C. E. Meili, assistant vice president, Beloit International (Canada) Ltd.



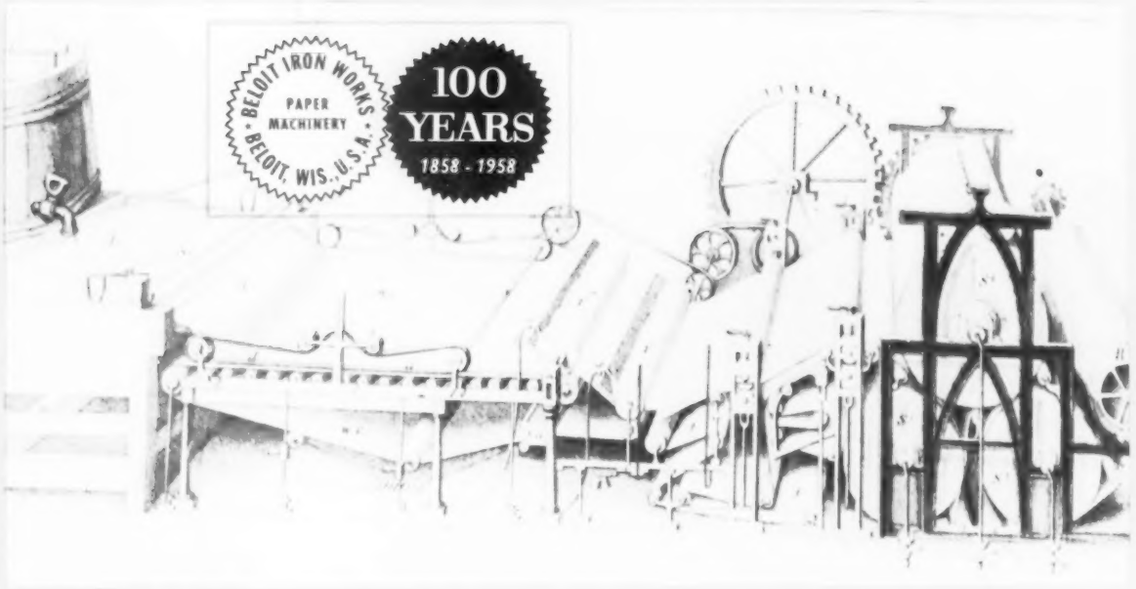
ENSO GUTZEIT'S Pentti Rautalahti *(c, l)* and Kai Halsas *(c, r)* discuss a drive, similar to one of the units being installed on their new Summa machine, with R. B. Hebb *(r)*, superintendent of erecting, and A. G. Olson, Beloit sales.



WEST VIRGINIA PULP AND PAPER Company's new No. 3 machine at Charleston, S. C., is discussed by Westvaco's project engineer G. P. Ramsay *(c)*, assistant mill manager C. A. Shoudy *(r)*, and C. E. Shimeall, Beloit sales.



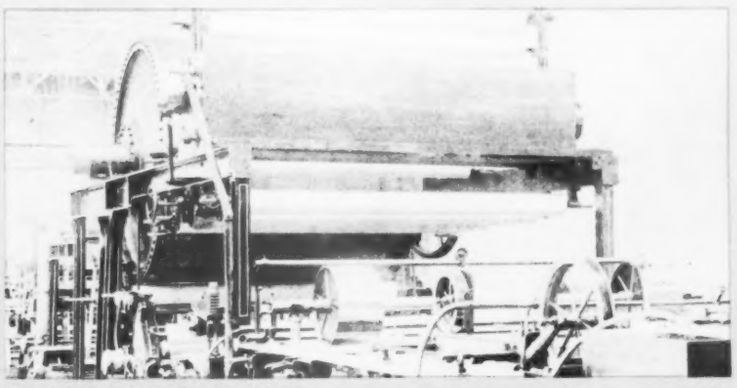
STONEBRIDGE PAPER Corporation's president A. G. Leonard Jr. *(l)* and paper mill supt. W. Smith *(r)* review inspection report on finish grinding of their new 12' Yankee with Beloit inspector John Kerwin *(c, r)* and R. R. Olson, chief, service department.



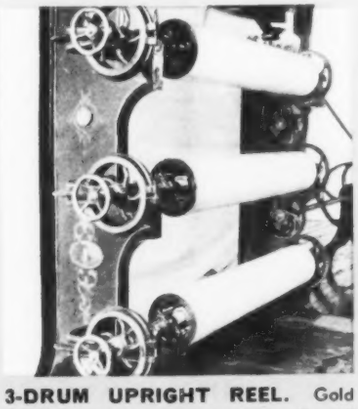
PAPER MACHINE, circa 1850. They just don't build 'em like they used to! And a good thing, too, wouldn't you say?

A BACKWARD GLANCE AT HISTORY... MAKES YOU APPRECIATE PROGRESS

Papermakers, glancing at the venerable items shown on these pages, will perhaps smile. If their memories go back far enough they may even remember working with some of these forerunners of today's high-speed high-production equipment. Views like these remind one that progress in the paper industry has been steady and gratifying. Paper machinery today is miles ahead of anything "Grandpa" could command—greater operating efficiency, more speed, better quality of paper, greater technology behind it.... These old pictures, long buried in our files, seem appropriate to Beloit's Centennial year. It is somewhat surprising to realize that Beloit's beginning (in 1858) was only 60 years after Nicholas Louis Robert had applied for patents on his crude experimental papermaking machine in France. But while a nostalgic backward look is excusable, and sometimes even stimulating, we never forget that the *forward look* is an obligation. There are busy years ahead, new machines to build, new records to establish. So, with this bow to the past we greet the future—pleased and privileged to be inaugurating our second century as "your partner in papermaking."



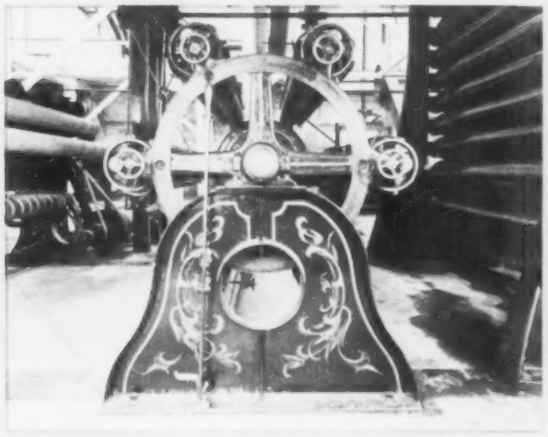
YANKEE TISSUE MACHINE during final stages of erection. In the early 1900's this type of machine was known as a "Flying Dutchman"—speedy for its day and age.



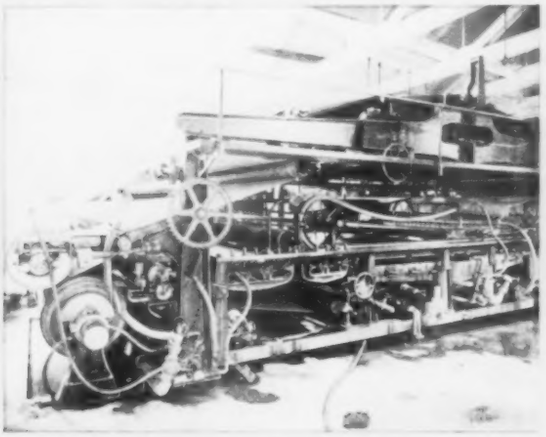
3-DRUM UPRIGHT REEL. Gold edging and decoration was once a "must."



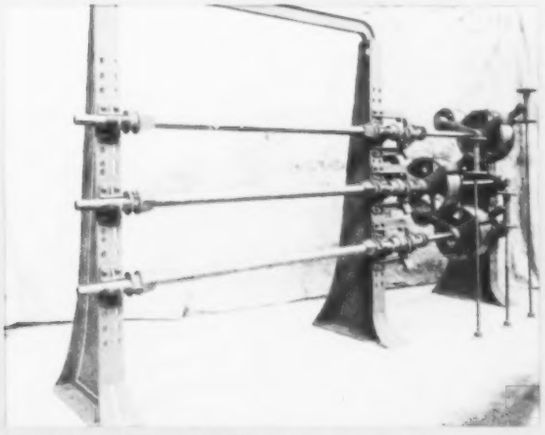
TURN-OF-THE-CENTURY view of North Machine Shop, Beloit Iron Works. You can't miss the general idea, but some things look strange—such as the overhead shafts, pulleys, and belts used for driving machine tools. Today, this area houses our Planer Department.



6-DRUM REVOLVING REEL—a forward step in speed. Lever *(c, l)* moved spools into reeling and unwinding position.



HARPER FOURDRINIER. No open couch draw here! Unusual Fourdrinier design was for production of fragile sheet.



3-SHAFT UPRIGHT WINDER—once the pride of the board field. Screw device adjusted tension on "flat belt" drive.

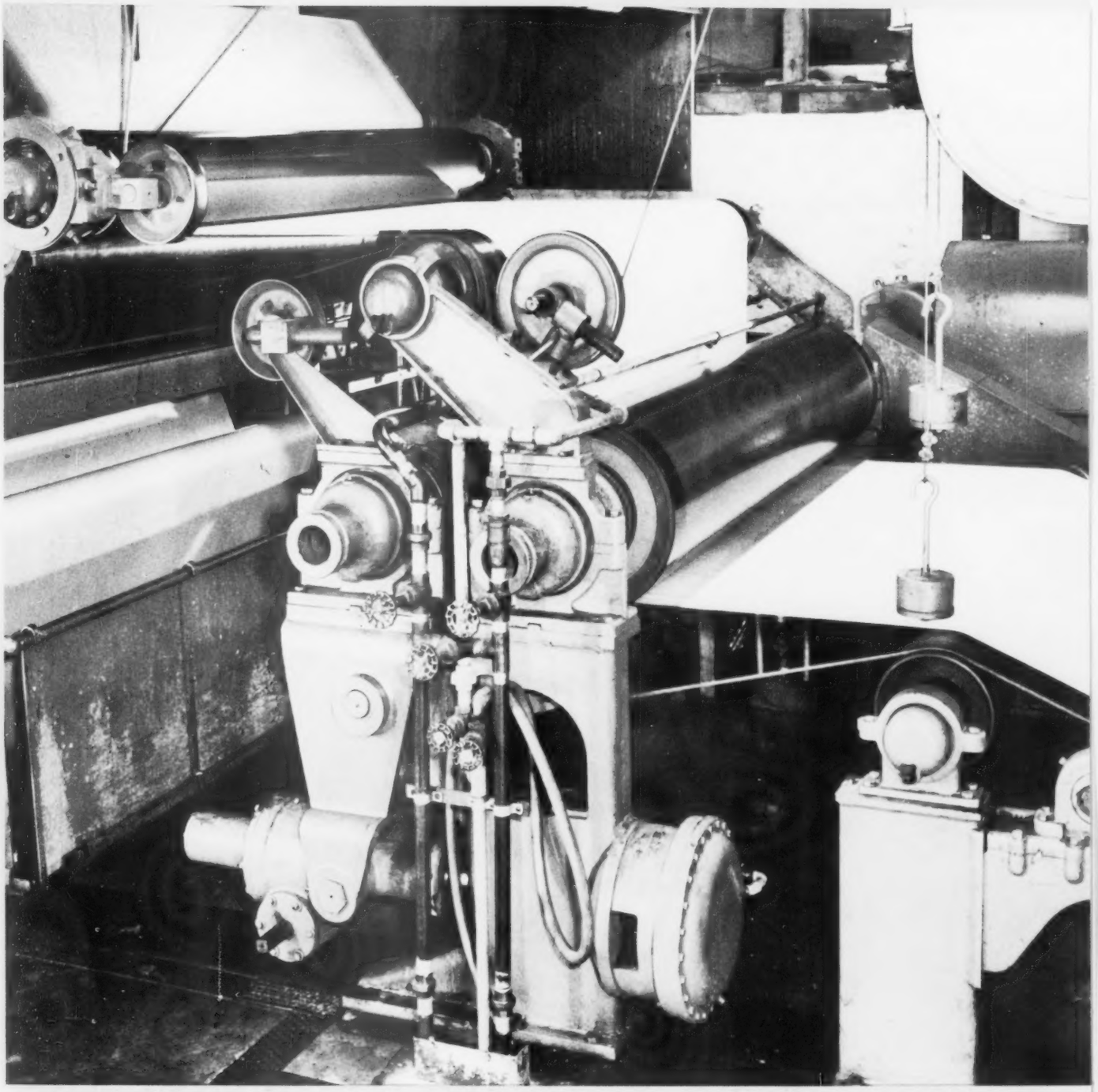
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100 YEARS 1858 - 1958

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NEKOOSA-EDWARDS PAPER CO. PHOTO BY J. W. MILLER

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The pulp you see here is Kingsport Bleached Soda

Mead customers are never pinched for pulp

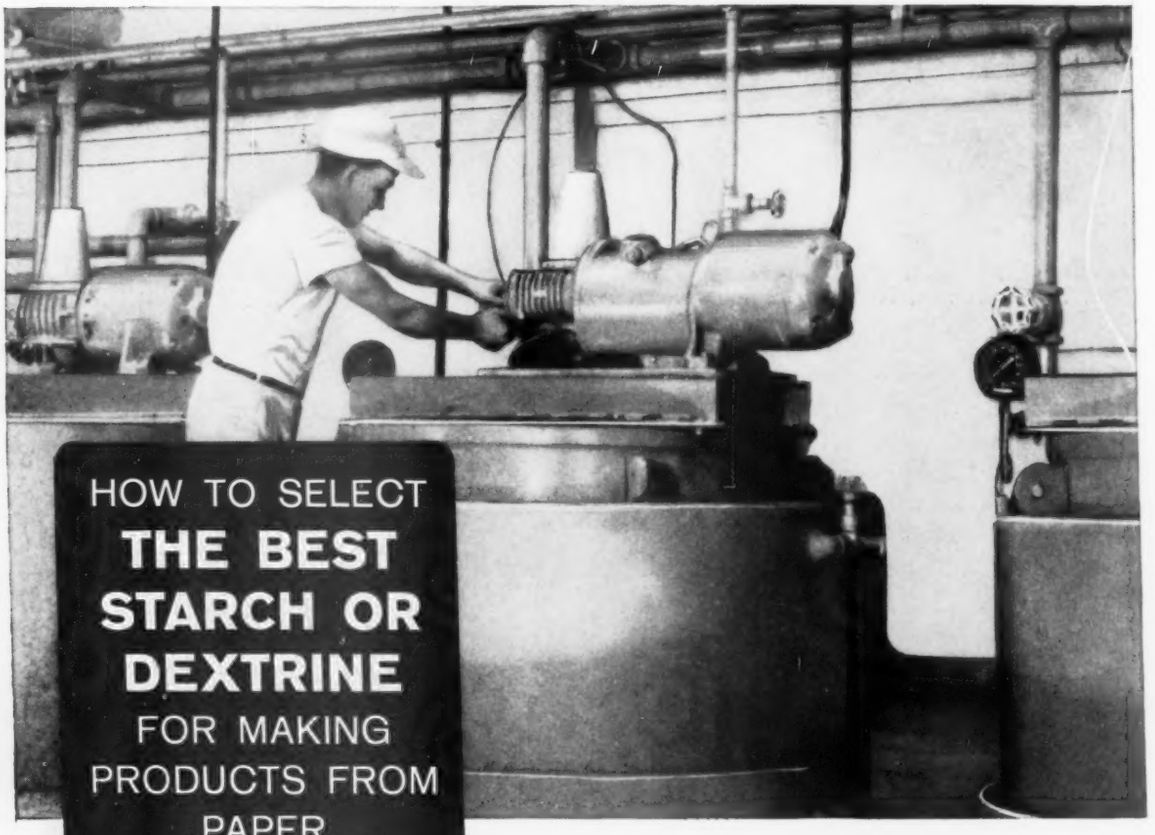
Buyers' market? True, but comes a time when a certain kind of pulp is needed—delivered exactly when it's wanted. Mead pulp customers never worry. The vast forest reserves and the eight great mills that serve our clients make extra sure of that.

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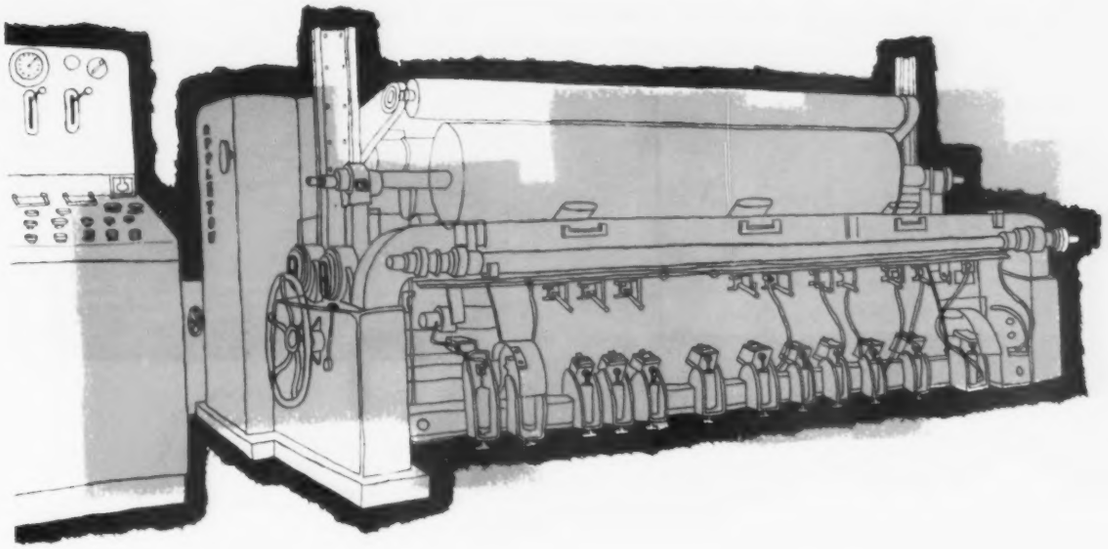
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BLANDIN PAPER COMPANY, Grand Rapids, Minnesota. One 12' diameter x 45' long suspended Barking Drum, and one 60" 10-knife MURCO Chipper.



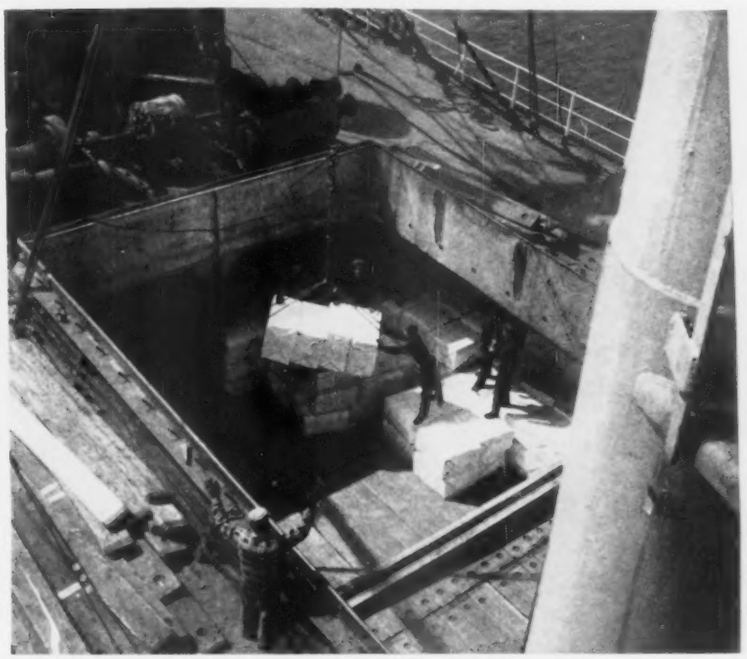
AMERICAN CAN COMPANY, Marathon Southern Division, Naheola, Alabama. One MURCO 104" 10-knife Chipper, one Wood Splitter, one 40" Rechipper.

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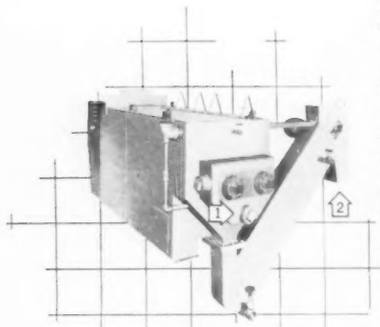
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"VISCOMATIC" SLAKER showing discharges for slurry (1) and grit (2).

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- Slake with COLD WATER.

  Water-to-lime ratio is approx. 2:1 by wt. (compared to 4:1 in slurry type slakers).

  Slaking is accomplished in approximately 5 minutes (compared to 30 minutes in slurry type slakers).

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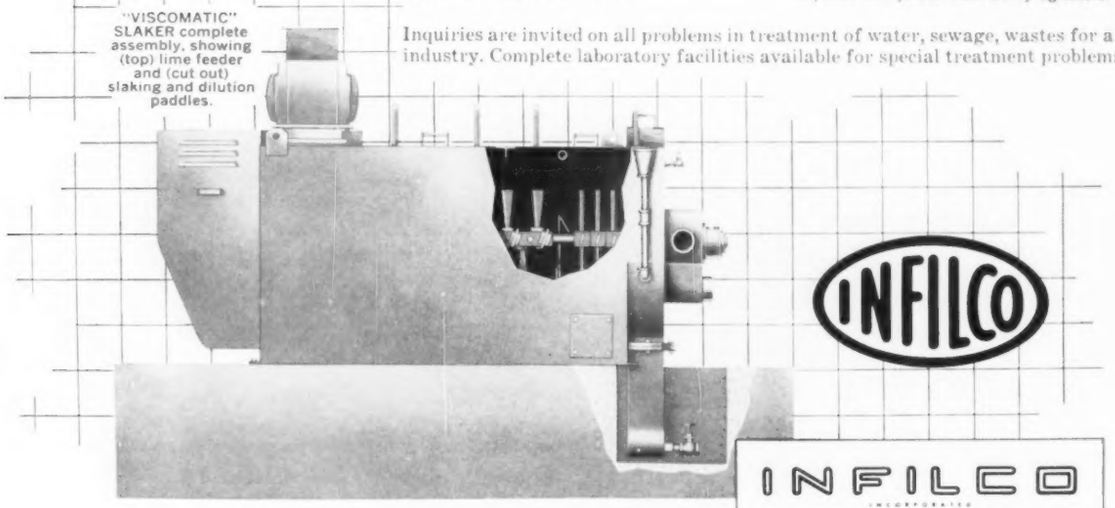
  High temperature accelerates the slaking process.

- Improve PROCESS and PRODUCT with SMALL PARTICLE SIZE.
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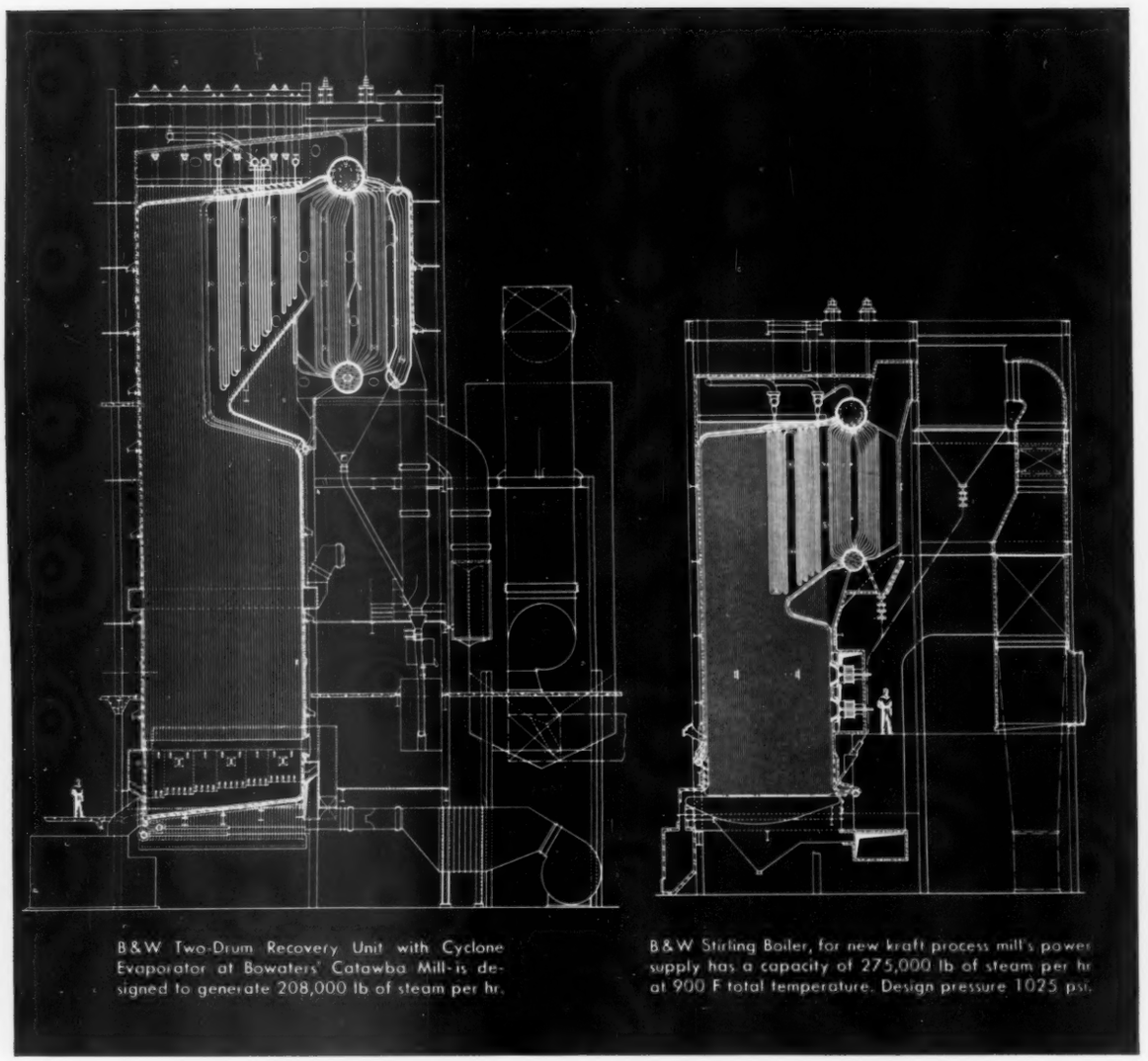
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P-809

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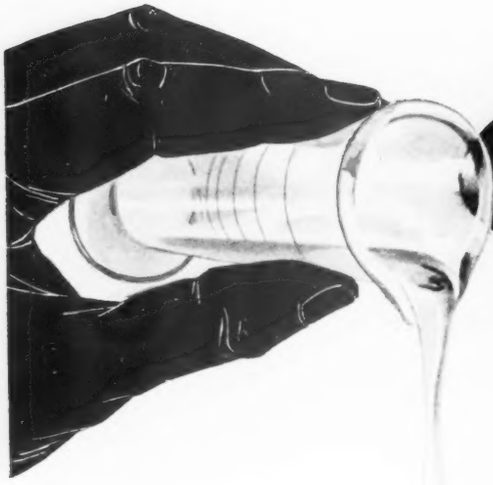
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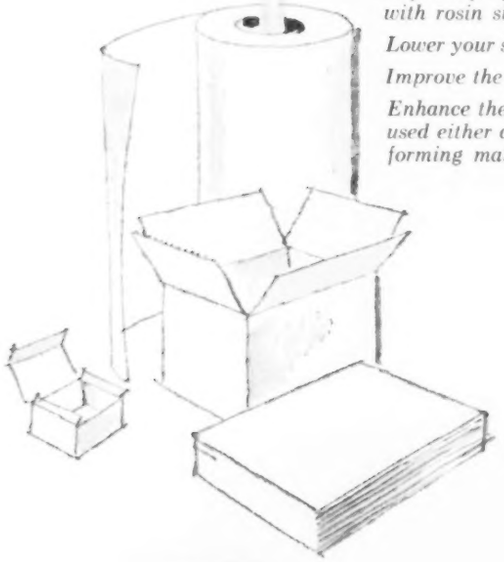
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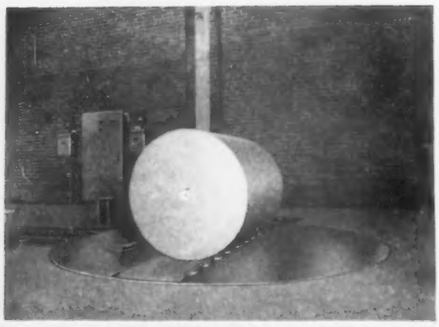
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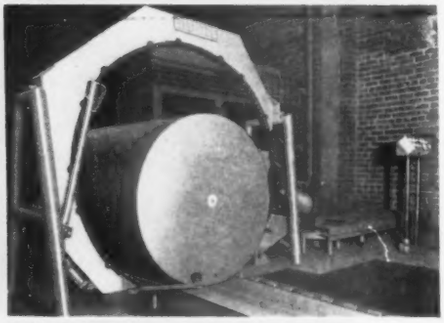
PAPER ROLLS

- HANDLED
- STRAPPED
- WEIGHED
- DISCHARGED

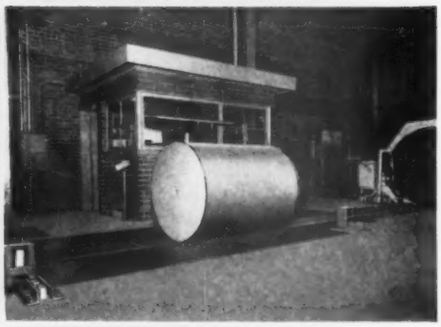
For SHIPPING— AUTOMATICALLY!



Roll comes from winder dump on to EPCO turntable. Begins cycle.



Roll passes thru strapping machine for automatic banding at both ends.



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This cost cutting system is designed and built to make your paper mill more profitable. Check into EPCO Automation today. We'll be glad to talk your problem over with you.

GET ALL THE FACTS NOW!

Send for our new Bulletin which describes EPCO Automation along with other EPCO Roll handling systems and equipment. Whatever your roll handling problem may be, EPCO can help you solve it efficiently and economically.



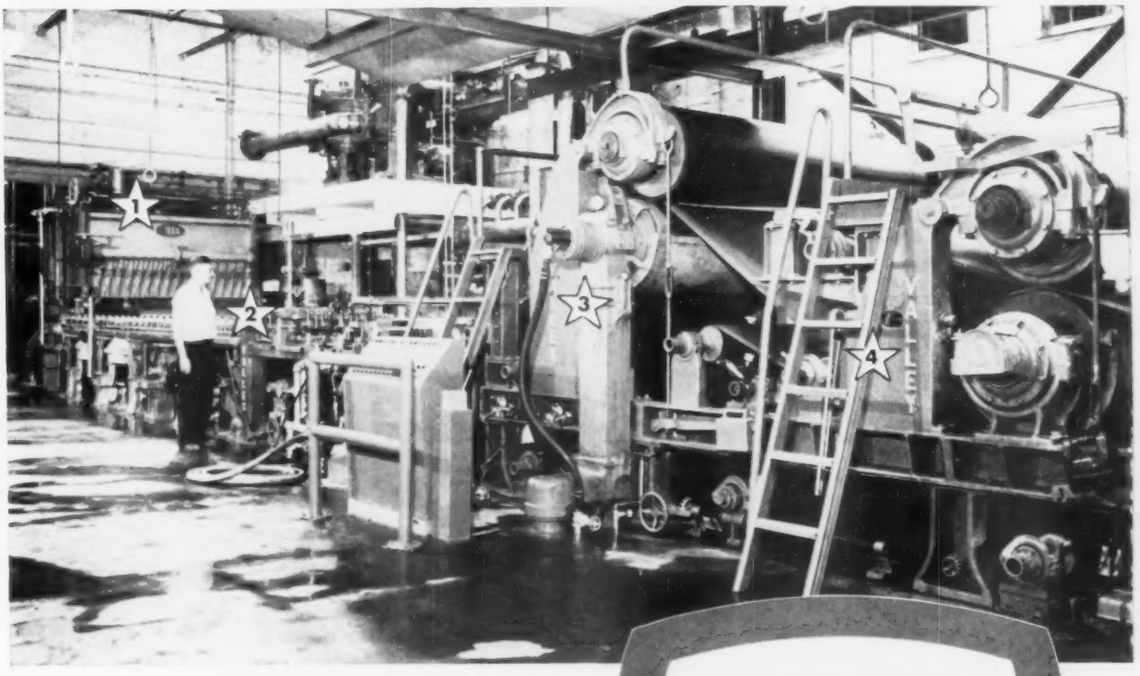
EPCO AUTOMATION SYSTEMS

ENGINEERING PRODUCTS COMPANY, Inc.

122-124 South Michigan Avenue • Chicago 3, Ill. • WAbash 2-8364

Export Division: Carl O. Goettsch, 2909 Carew Tower, Cincinnati 2, Ohio

Nekoosa No. 3 REBUILD



by **VALLEY**

- **NEW** Inlet and Head Box
- **NEW** Fourdrinier
- **NEW** Suction Press Arrangement
- **NEW** Plain Press Arrangement

Following the complete rebuild of the wet end of No. 3 machine at the Nekoosa mill of Nekoosa-Edwards Paper Company, company officials report extremely satisfactory performance and that the machine is producing a sheet with good characteristics.

For full information, write —

VALLEY IRON WORKS COMPANY
APPLETON, WIS.

Canadian Representatives: Pulp & Paper Mill Accessories Ltd., P.O. Box 903, Station "O" Montreal 9, Quebec

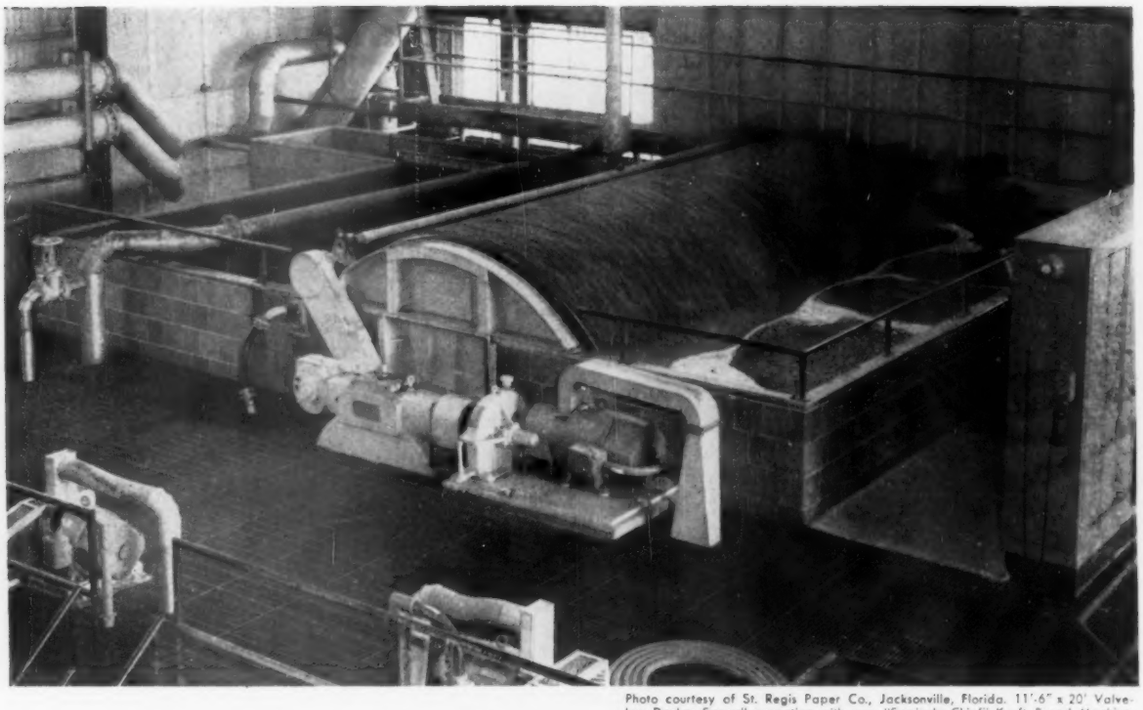


Photo courtesy of St. Regis Paper Co., Jacksonville, Florida. 11'-6" x 20' Valveless Decker Saveall operating with new "Seminole Chief" Kraft Board Machine.

IMPCO VALVELESS DECKER-SAVEALLS

There are more than 235 Impco Valveless installations. Many of these fall in the Decker-Saveall category. Several handle the entire paper machine production, using white water as dilution. Some act as broke thickeners, again using white water as dilution. Others are in a variety of saveall applications. In all cases the Impco Valveless delivers clarified effluent suitable for re-use, with pulp discharged at a controllable consistency for proper stock preparation. May we show you how this versatile machine can reduce your costs and simplify your operating procedure?

IMPCO®

IMPROVED MACHINERY INC.
NASHUA, NEW HAMPSHIRE

In Canada, Sherbrooke Machineries Limited, Sherbrooke, Quebec



New Salem pipe line to augment present system will add approximately 50 MGD capacity to city water supply system.

a line of growth... for Oregon's capital city

American Concrete Cylinder Pipe is helping Salem, Oregon to grow

A simple but important fact is that no city, however great its potential, can grow beyond the capacity and dependability of its main water supply system.

Recognizing this fact, and envisioning a population in 30 years that will require three times the maximum capacity of present water transmission lines, Salem, the capital city of Oregon, is carrying out a program designed to meet future needs.

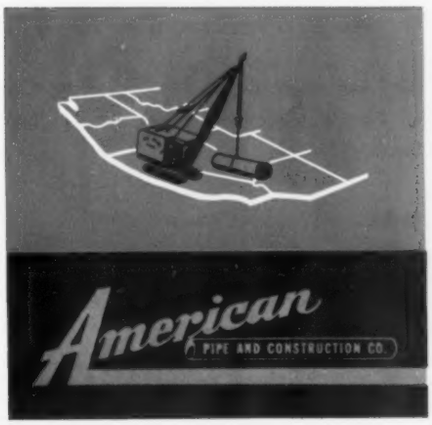
Under the direction of the City's Water Department Manager, John L. Geren, and the technical supervision of Consulting Engineers Clark and Groff of Salem, an 18-mile pipe line of 48" and 54" diameter American Concrete Cylinder Pipe is being installed by Lord Brothers, a general contracting firm of Portland, Oregon. This new line will triple the present capacity of the supply system.

The performance record of this type of reinforced concrete cylinder pipe has been so outstanding throughout the West that Salem can be confident that this water "growth line" will be giving efficient, economical service for many, many years to come.

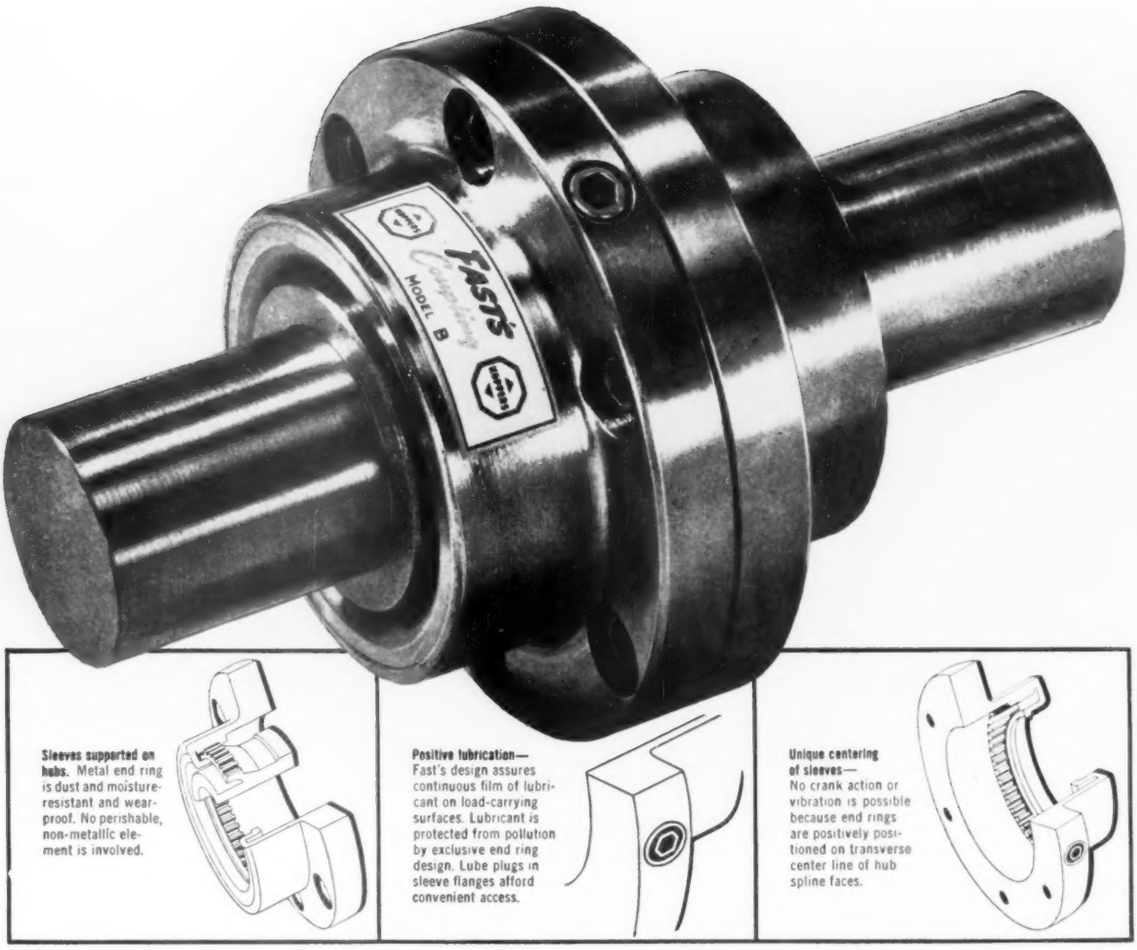
Strength, permanence, sustained high carrying capacity, and trouble-free service are characteristics of American Concrete Cylinder Pipe which make it the right pipe for this forward looking city.

When planning your future water "growth lines," look to American's quality pipe line products, extensive production facilities and half century of experience.

Ask for complete information concerning the particular class of pipe that will meet your design requirements.



Los Angeles:
P.O. Box 3428, Terminal Annex • LOrain 4-2511
Hayward:
P.O. Box 630 • JEfferson 7-2072
San Diego:
P.O. Box 13 • CYpress 6-6166
Phoenix:
2025 South 7th St. • ALpine 2-1413
Portland:
518 N.E. Columbia Blvd. • BUtler 5-2531



Sleeves supported on hubs. Metal end ring is dust and moisture-resistant and wear-proof. No perishable, non-metallic element is involved.

Positive lubrication— Fast's design assures continuous film of lubricant on load-carrying surfaces. Lubricant is protected from pollution by exclusive end ring design. Lube plugs in sleeve flanges afford convenient access.

Unique centering of sleeves— No crank action or vibration is possible because end rings are positively positioned on transverse center line of hub spline faces.

Fast's Model B coupling reduces downtime and upkeep for light-to-medium drives

Mechanical flexibility eliminates costly shutdowns and expensive shaft replacements. But—it's only one of many cost-saving features.

Now you can profit from the durability and economy of famous Fast's couplings in a smaller and lower-cost version—available in 5 sizes for shafts ½" to 3⅛" in diameter.

The Model B coupling gives you the same features that have made Fast's the world's leading coupling for over 35 years. You get the same trouble-free performance, longer service life and lower maintenance costs. You also get prompt delivery because stocks are on hand to meet practically every need. Free engineering service is also available.

Write today for more details to KOPPERS COMPANY, INC., Fast's Coupling Dept., 2704 Scott Street, Baltimore 3, Md.

Engineered Products
Sold with *Service*

KOPPERS

THE ORIGINAL
FAST'S Couplings



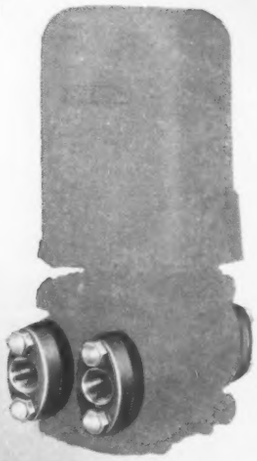
PUGET PULP IS CLEAN

PUGET SOUND PULP and TIMBER CO.
BELLINGHAM • WASHINGTON



FOXBORO d/p CELL

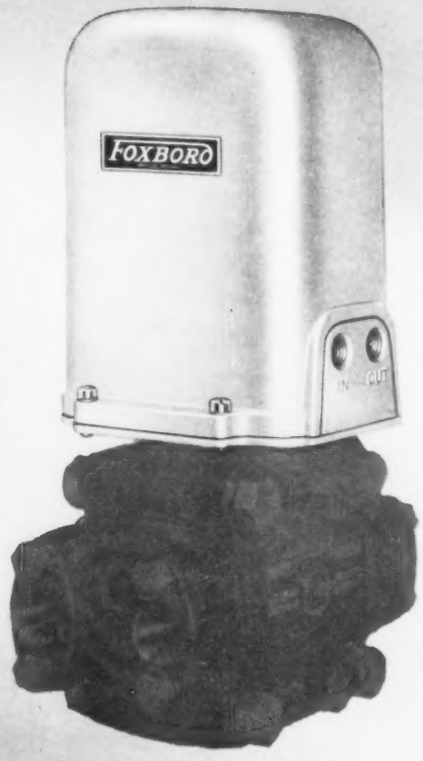
unequaled –



Simplest installation — orifice flange tap connections at standard spacing, are provided at both ends.



Drain and vent holes at lowest and highest points on both sides.



Purged cover protects transmitter from weather, dust, and fumes.

Over 60,000 now in use!

No zero drift . . . positive overrange protection . . . high sustained accuracy even under the most punishing operating conditions. No wonder over 60,000 Foxboro d/p Cell Transmitters have been installed since they were introduced in 1948.

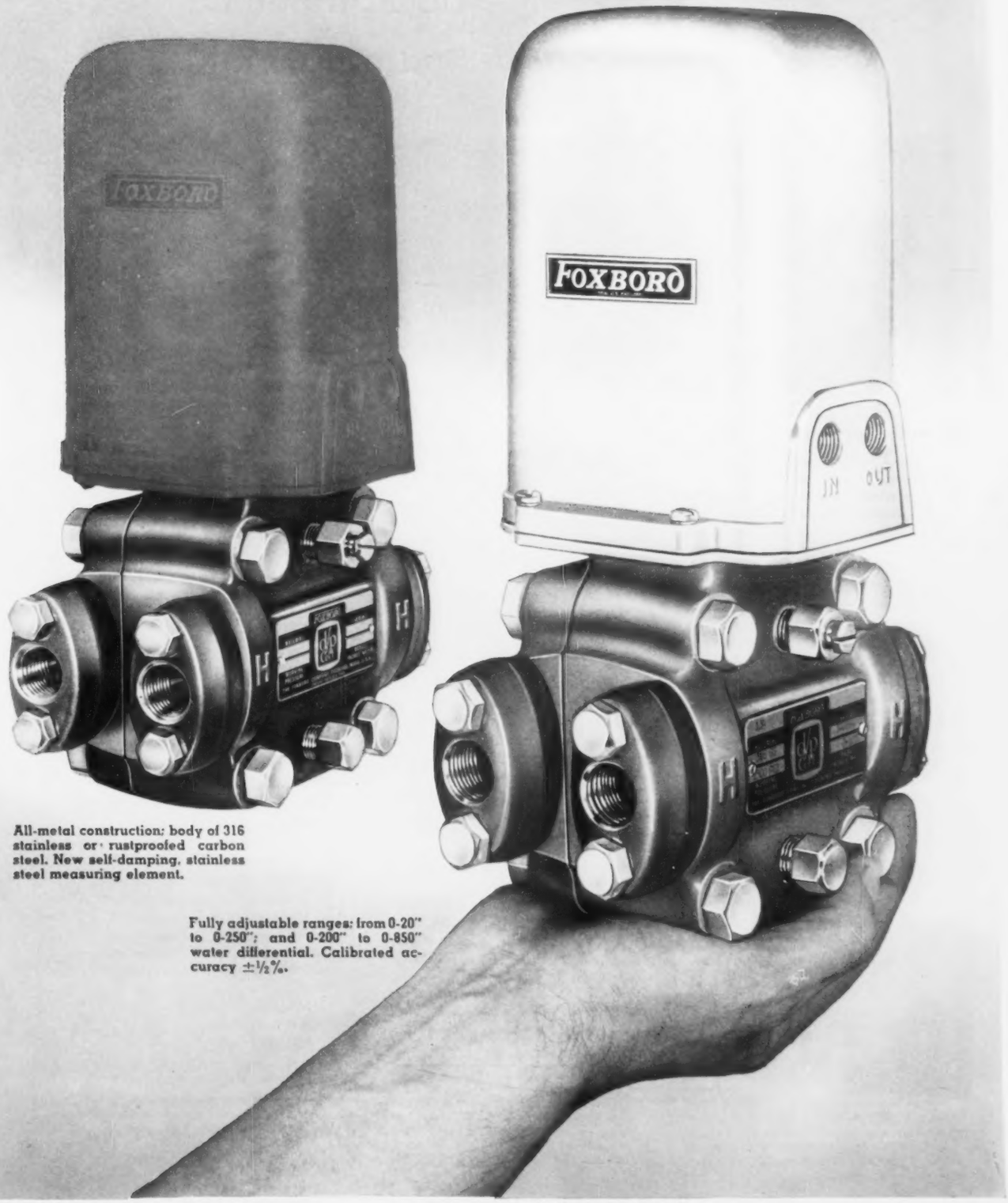
By introducing the modern concept of high speed flow measurement and control, these differential pressure transmitters have *revolutionized* many an industrial process. Bulletin 13-11A shows how — and portrays the benefits the d/p Cell Transmitter offers you. Write **The Foxboro Company, 994 Neponset Ave., Foxboro, Mass., U.S.A.**

FOXBORO
REG. U.S. PAT. OFF.

FIRST in Flow Measurement and Control

FLOW TRANSMITTERS...

in accuracy, stability and performance



All-metal construction: body of 316 stainless or rustproofed carbon steel. New self-damping, stainless steel measuring element.

Fully adjustable ranges: from 0-20" to 0-250"; and 0-200" to 0-850" water differential. Calibrated accuracy ±½%.

BRIEFS for buyers of

Caustic Soda
Sodium Chlorate



Some tips on supply logistics

Like all Hooker plants, this one in Montague, Michigan, is near deep water for a purpose—a purpose you might consider when choosing a supplier.

The water gives our customers the option of barge as well as rail delivery.

For many, the barge service means cheaper delivery. For others, it offers an alternative means of shipment in case of interruption in rail service.

Here are three other "pluses" to consider when you select a chlorine-caustic supplier. (As a Hooker customer, you enjoy all of them):

1. Competent engineering help. An experienced supplier can give you assistance in designing or revamping your chlorine or caustic soda handling system.

2. Operating assistance. Your supplier's technical servicemen can often spot—and help you correct—operating troubles before they become serious. Do you get the advantage of periodic technical service visits?

3. Safety programs. Your supplier should be able to give you up-to-date advice on safe equipment and handling methods.

We'll be glad to enlarge on these points, with your requirements in mind. Simply phone or write the nearest Hooker sales office.

Chlorine dioxide bleaching

Are you taking advantage of the high brightness—high paper strength you get with chlorine dioxide?

If so, you'll be interested in what we are doing to insure good supply of *sodium chlorate*—the chemical "raw material" you need for this fast-growing new bleaching method.

Thanks to our Oldbury Products plants at Niagara Falls, N. Y., and Columbus, Miss., we're currently the nation's largest producer of sodium chlorate. But even that isn't good enough to meet *tomorrow's* needs.

The Columbus plant has been in production since 1954. Last summer we upped its capacity by 5,000 tons/yr. Now we're building again. By early 1958, another 5,000 tons/yr. will be on tap.

All this is by way of backdrop to four points you'll do well to consider when deciding where *you'll* go for sodium chlorate. Your purchase of Oldbury® sodium chlorate gives you:

1. Fastest service you can get in East and South, from our two plants.
2. Skilled technical help when you need it, *regardless of the process you use*.
3. Sodium chlorate that's of 99% minimum purity.
4. Over 50 years' experience in serving —and growing with—the pulp and paper industry.

May we spell out for you how this kind of service helps insure successful chlorine dioxide bleaching? For details, just write *Hooker Electrochemical Company*.



New booklet, pocket size, offers useful facts on buying caustic soda.

Besides information on forms, grades, and shipping containers, contents include a factual discussion on 50% *vs.* 73% liquid caustic, and a handy nomograph to help you figure which strength is your better buy.

There's also a nomograph to help you estimate your requirements for various process solutions.

Check the coupon for a copy.

Check items you'd like to receive:

- ☐ *Caustic Soda Buyer's Guide* booklet
- ☐ Technical data on caustic soda
- ☐ Technical data on sodium chlorate

For information on these other Hooker chemicals used in the pulp and paper industry, check below:

- ☐ Muriatic Acid
- ☐ Sodium Sulfide
- ☐ Sodium Sulfhydrate

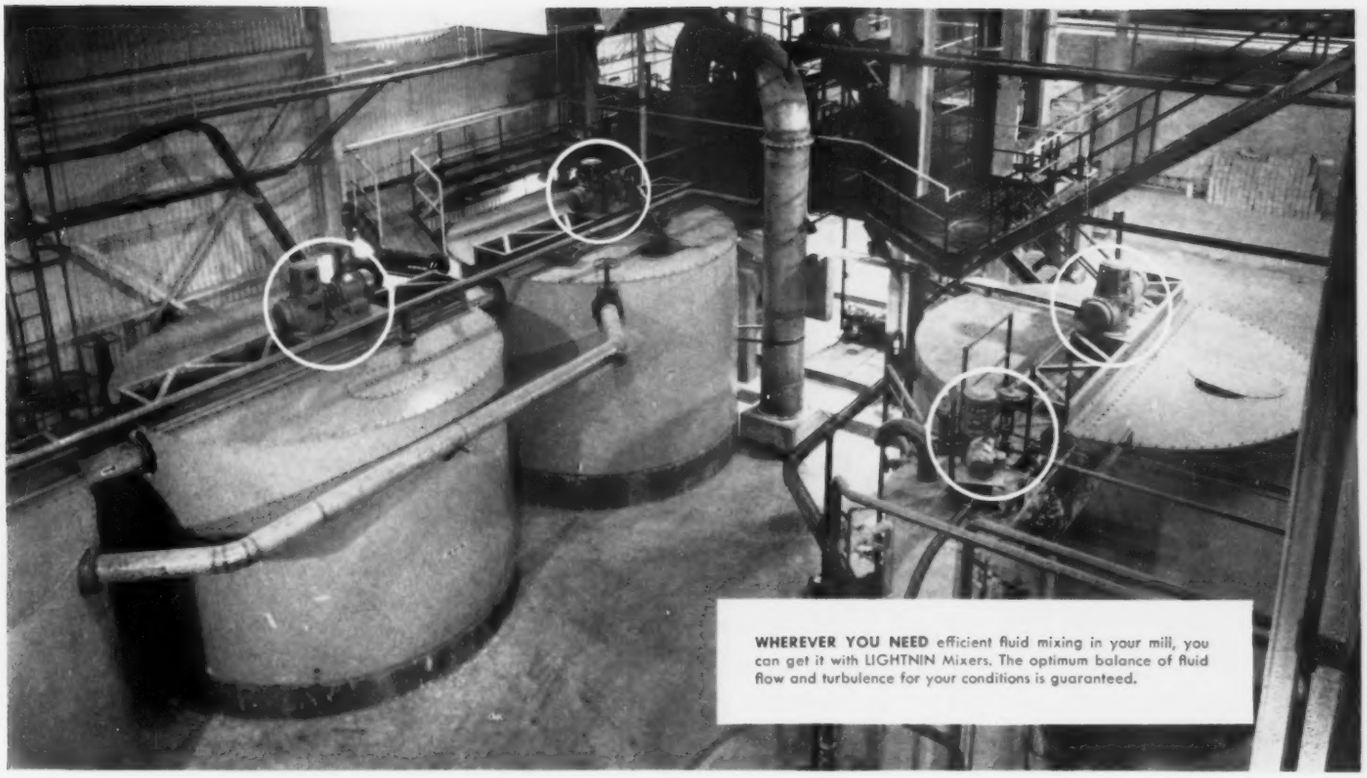
Clip and mail to us with your name, title, company address.

HOOKER CHEMICALS PLASTICS

HOOKER ELECTROCHEMICAL COMPANY

1904 FORTY-SEVENTH STREET, NIAGARA FALLS, N. Y.

Niagara Falls Tacoma Montague, Mich. New York Chicago
Los Angeles Philadelphia Worcester, Mass.
In Canada: Hooker Chemicals Limited, North Vancouver, B. C.



WHEREVER YOU NEED efficient fluid mixing in your mill, you can get it with LIGHTNIN Mixers. The optimum balance of fluid flow and turbulence for your conditions is guaranteed.

Why you can't afford to be **complacent** *about mixing*

Time was when you could afford to be satisfied with just-average mixing in a tank or chest.

No more.

Not when you can get equipment that will blend three tons of 3½% groundwood and sulfite stocks to complete uniformity in 10 minutes.

Not when you can keep 3,000 sticky gallons of starch moving while it cooks right up to the bursting point; then hold it uniform until you're ready to use it.

Not when starch, color, and coatings must be prepared in a highly automated system, serving five paper machines with 250 tons daily output.

Not when you'd like to adjust the color of 4% stock in a beater chest or machine chest—in *one minute flat.*

How you can get results you want

Today's fluid mixing requires a technology that can accurately, *predictably* equate mixer design and horsepower with the exact results you want.

You get this technology when you specify LIGHTNIN Mixers for your chests and tanks.

You get the precise power level you need to accomplish the job you want done in a given chest or tank, within a given time.

Correct power for your mixing operation is chosen scientifically from hundreds of available power-speed combinations ranging up to 500 HP. Selection is based on unique data derived from many thousands of pilot runs, plus successful installations in more than 50 mills. Results are *guaranteed.*

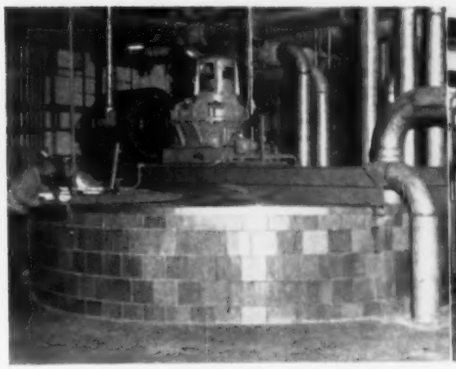
For quick, competent help on mixing that does what you want it to do, call your LIGHTNIN representative (listed in Thomas' Register and Pulp & Paper Mill Catalog). Or write us today.

Lightnin® Mixers

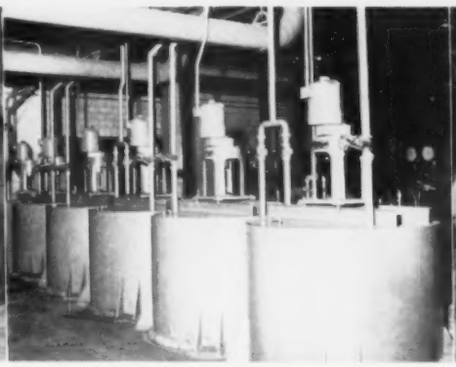
MIXCO fluid mixing specialists

MIXING EQUIPMENT Co., Inc., 141-d Mt. Read Blvd., Rochester 11, N.Y.

In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 10, Ont.



SMOOTH OUT fluctuations in stock consistency with LIGHTNINs in your stock chests. LIGHTNIN Mixers are being used successfully on stock consistencies up to 6% and in chests as large as 48 feet diameter by 50 feet high.



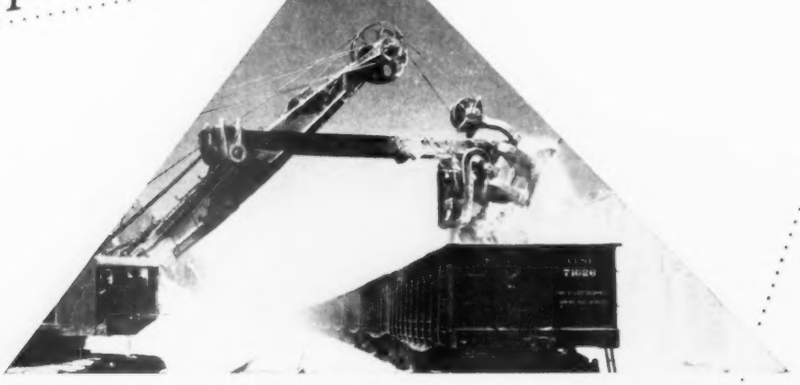
GET UNIFORM COLOR rapidly with propeller-type LIGHTNINs. This battery, installed in 100-inch-deep stainless steel tanks, prepares liquid color for five paper machines. For details on these LIGHTNIN models, request Catalog B-103.



MIX COATINGS to high degree of uniformity in unbaffled tanks with LIGHTNIN Portable Mixers. Thirty standard models to choose from; electric or air motors, direct or gear drive. Sizes ⅛ to 3 HP. Fully described in Catalog B-108.

SULPHUR

helps to create headline products



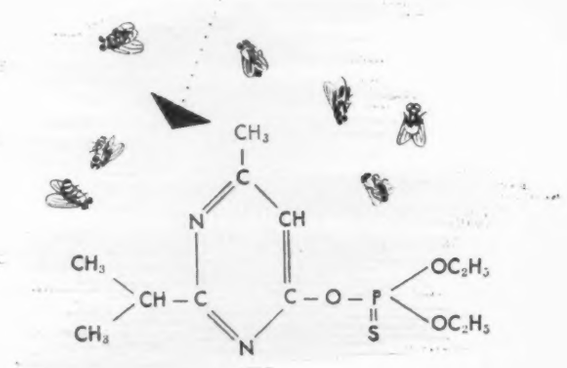
DIAZINON*

What a 'killer' this complex chemical is turning out to be! And quite impartial as to its victims: — houseflies, barnflies, fruitflies, aphids, mites, ants, beetles, chinch bugs, roaches, and many other pests that bother man and beast. It kills them dead!

As with the former chemicals which made such notable headway in man's fight to subdue these destructive pests, Sulphur is very much in the picture—here is one of the many variations of the benzene ring . . . the Diazinon Formula. That letter "S" tied in with the letter "P" discloses the all-important thiophosphate.

Sulphur, often called one of the Four Pillars of the Processing Industry, is benefiting mankind in many ways. None is more important than that of controlling crop-destroying pests.

**A product of the Geigy Chemical Corporation.*



Texas Gulf Sulphur Co.

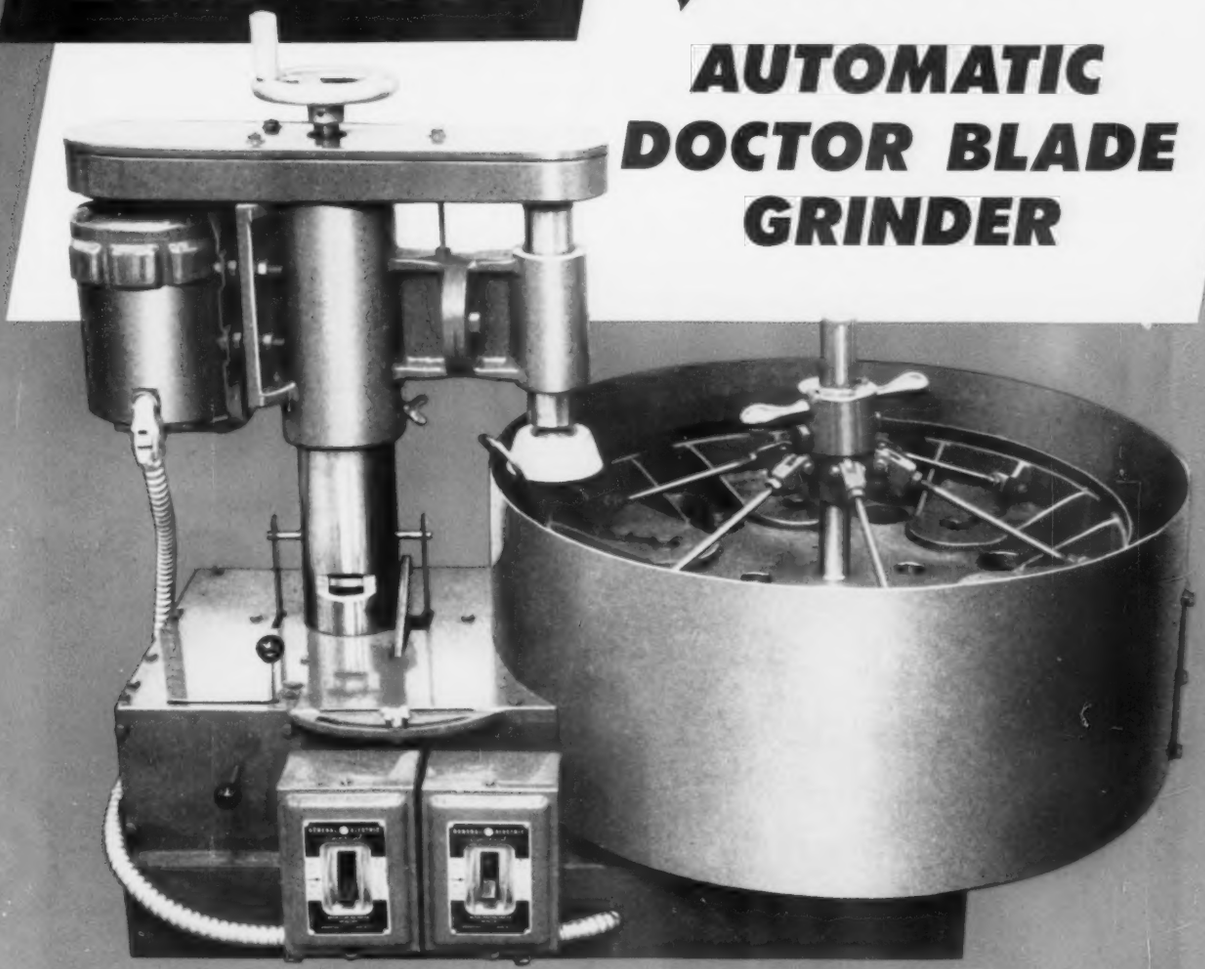
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811 Rusk Avenue, Houston 2, Texas

Sulphur Producing Units
- Newgulf, Texas
- Moss Bluff, Texas
- Spindletop, Texas
- Worland, Wyoming

NEW LOW COST

Tidland

AUTOMATIC DOCTOR BLADE GRINDER



★ AUTOMATIC

... once the machine has been set up with the blade fixed on the rotary table, dressing continues until predetermined depth of grinding is obtained. At this point the machine shuts off automatically.

★ SAVES LABOR

... takes less than 3 minutes to put blade in machine for grinding—when the job has been set up there is no need for the operator to tend the machine during the cutting process.

★ PRECISION GRINDING

... regardless of the blade length (up to 280") grinding will be uniform and precisely to the tolerances required. Rate and depth of grinding readily selected and set.

★ LOW COST

... the original low price represents an easily amortized capital investment.

★ COMPACT

... the machine occupies less operating space than a standard office desk.

Tidland's precision doctor blade grinder features a heavy-duty, ball-bearing grinder quill, a ball-bearing mounted rotary table with a positive clamping device for holding the blade, automatic mechanical feed and a self-contained coolant system.

Two models of the machine are available, a self-contained cabinet model and a bench model. Each model comes in three standard table diameters . . . 18-inch, 24-inch and 30-inch to accommodate blades to 280 inches in length. The machines are completely automatic, however the machine may be fed manually.

For further information write, wire or call

Tidland

MACHINE COMPANY

P. O. BOX 1014 CAMAS, WASHINGTON



FOR CONTROLLED OPACITY

...start with the right pulp!

The desired opacity in paper depends, of course, on many variables—but one of the most important requirements for good opacity is the correct choice of the correct pulp.

Leading paper makers for 50 years have come to us for scientifically correct SOLKA® Pulps—made to match the exact needs of their fine specialty papers.

Whether your objective is opacity, bulk, dimensional stability, high brightness, superior reproduction, or whatever, there are engineered SOLKA Pulps to help you achieve them superlatively well.

Our research facilities, technical personnel, and modern manufacturing plants are at your service. Let us know your problems. Write Dept. CP-4, our Boston office. In Canada, Brown Forest Products Ltd., Castle Building, Montreal.

BROWN COMPANY

150 Causeway Street, Boston 14, Massachusetts

Mills: Berlin and Gorham, New Hampshire



New H_2O_2 Shell Chemical Plant now on stream At Norco, Louisiana

With a multi-million pound capacity, this new Shell Chemical plant now takes its place as an important source of high-purity hydrogen peroxide.

Deliveries are now being made from Norco in drum to tank-car quantities.

To help you with your H_2O_2 application and handling problems, Shell Chemical maintains a very active research program and a field service to render expert technical assistance to processors. As a major consumer of hydrogen peroxide, Shell has acquired extensive experience in the special problems of H_2O_2 chemistry.

Your Shell Chemical representative will be glad to consult with you on your own H_2O_2 requirements.

Write to:

SHELL CHEMICAL CORPORATION

CHEMICAL SALES DIVISION

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IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited, Montreal • Toronto • Vancouver

SHELL

THE NEWEST DEVELOPMENT IN CHEMICAL RECOVERY PRACTICE

The Large Recovery Unit (over 500 Tons)

Just a few years ago, the consensus was that chemical recovery units had reached their maximum size—350 to 400 tons. Some thought that the numerous problems peculiar to burning black liquor almost automatically put an end to the trend toward larger units.

C-E engineers, well aware of the fact that larger recovery units mean less investment and operating costs per unit of capacity, turned their concerted attention to the problem of size. In quick succession they developed the panel type superheater, the panel type water screen, the decanting furnace hearth and a system of tangential secondary air admission. By combining these developments with a baffleless boiler and modern retractable soot blowers, there evolved a recovery unit design that removed the limitation of size.

Thus, in October, 1954, Combustion received its first order for a recovery unit to handle 1,500,000 pounds of dry solids per 24 hours. Fifteen days later, a different customer ordered a C-E unit to handle 1,610,000 pounds of dry solids. Thirty months later, in March, 1957, C-E received a duplicate order from the first customer and—again 15 days later—received a duplicate order from the second customer. Since 1954, six other leading pulp and paper companies ordered large C-E recovery units, the sizes of which are listed below. Largest of these is a unit with a capacity of 2,000,000 pounds of dry solids, by far the biggest recovery unit ever ordered. Today, five of the ten units are in service. In each case, their performance equals or exceeds expectations.

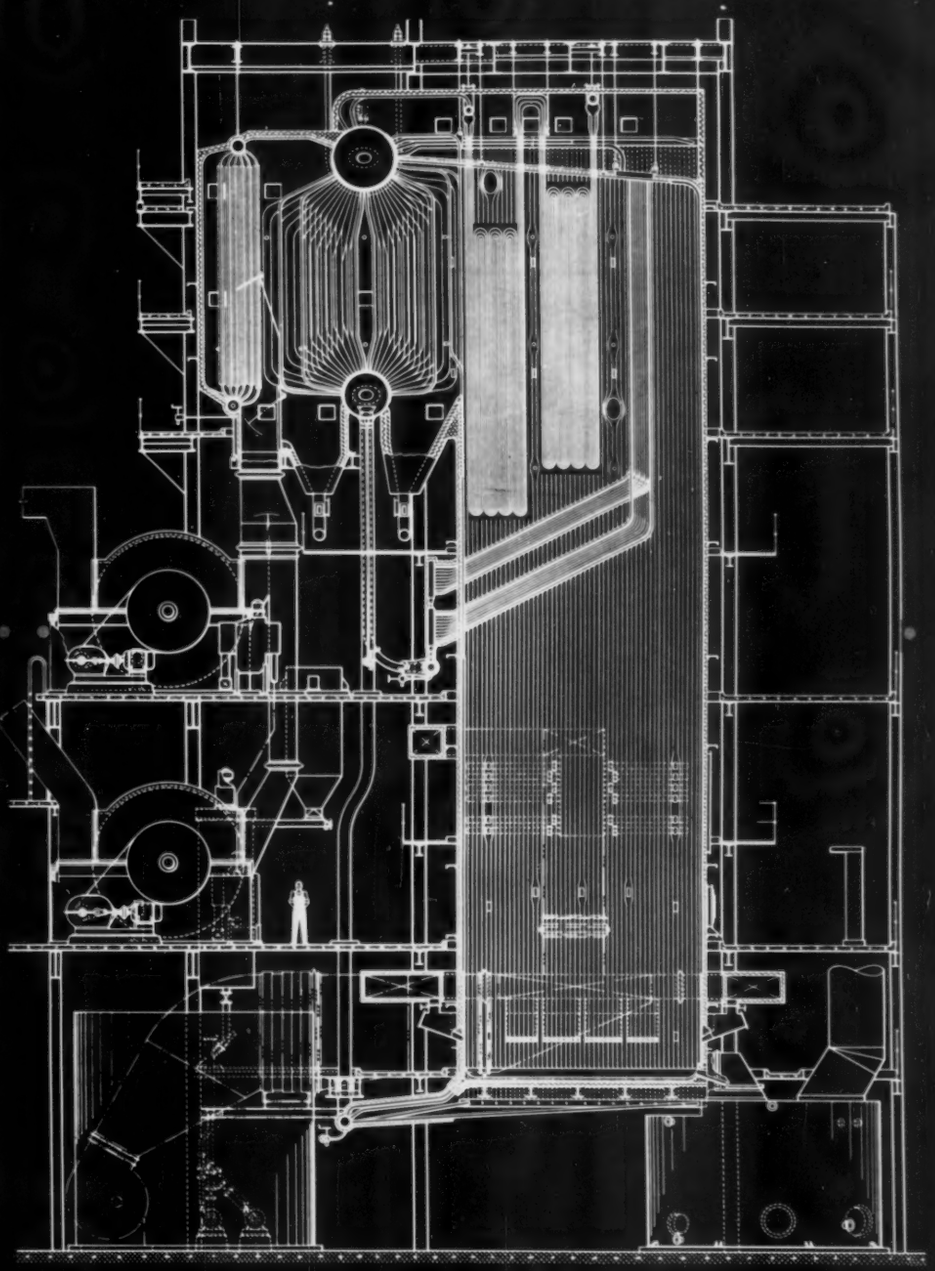
"Breaking the size barrier" represents an achievement made possible by Combustion's continuing efforts to make ever-better products. As to acceptance—the record speaks for itself.

C-109A

C-E Contracts for Large Recovery Units
(500 Tons and above)

Name	#Dry Solids/24 Hrs.
Enso Gutzeit OY	1,500,000*
Union Bag & Paper Corp.	1,610,000*
Halifax Paper Co., Inc.	1,500,000*
B. C. Forest Products Ltd.	1,600,000*
Longview Fibre Co.	2,000,000*
Crossett Paper Mills	1,500,000
International Paper Co.	1,500,000
Enso Gutzeit OY	1,500,000
Union Bag & Paper Co.	1,610,000
East Texas Pulp & Paper Co.	1,600,000

*In service



COMBUSTION ENGINEERING

C-E

Combustion Engineering Building

200 Madison Avenue, New York 16, N. Y.

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE

Here's why WEST END can answer your inquiry on product availability immediately!

When you phone an order or request information on current availability or long term supply of a product, the Sales Office Manager in Oakland with whom you speak can contact the plant at WEST END immediately. He talks by private wire teletype with the Production Manager. An answer or firm commitment is given immediately. It is relayed to you often while you are still on the phone.

WEST END 's Sales Office Manager sales representatives and plant executives work together as a team manning a system that is, in our opinion, uniquely outstanding in the chemical industry. Their confidence in the efficiency of this system is reflected in the enthusiastic, helpful and friendly manner in which they promptly serve you . . . our customers.

WEST END CHEMICAL COMPANY
DIVISION OF STAUFFER CHEMICAL COMPANY
1956 WEBSTER, OAKLAND 12, CALIF. • PLANT, WESTEND, CALIF.

SODA ASH
SALT CAKE
BORAX • HYDRATED LIME

NO GAP AT THE LAP



WITH ESCO DIGESTER STRAINERS

ESCO designed digester strainers provide for adequate circulation throughout the entire cook. Free flow of liquor at high velocity produces maximum efficiency in the circulating pump. The tendency for deposits to build up inside the heat exchanger tubing is minimized.

SIMPLE TO INSTALL, EASY TO CLEAN AND NO GAP AT THE LAP

ESCO Digester Strainers may be attached with *ESCO* Wedge-type Lugs or bolts for easy cleaning changing. *ESCO* lap joints means a cleaner circulating system.

ESCO Cast Digester Strainers are available in the high alloy steels best suited to your corrosion problem. Strainer screens are also available cast in matching alloys.

Get the greatest efficiency from your digester circulating system. Write for *ESCO* Catalog No. 175.

ESCO®

ELECTRIC STEEL FOUNDRY COMPANY

2167 N. W. 25TH AVE. • PORTLAND 10, OREGON

MFG. PLANTS AT PORTLAND, ORE. AND DANVILLE, ILL.
Offices in Most Principal Cities
ESCO INTERNATIONAL, NEW YORK, N. Y.
IN CANADA ESCO LIMITED



HUYCK GENERAL STAFF directs company policy and over-all planning of felt research and development, designing, engineering, manufacturing and sales.



CONSTANTLY IMPROVING FELTS, Huyck's research project leaders, directing over 40 experienced scientists, engineers and technicians, meet regularly to discuss basic and application research.



MEN-FROM-HUYCK, including district managers, sales and field service engineers, get together at Huyck's plant at Aliceville, Alabama — the world's largest modern felt mill — to discuss ways of improving service to papermakers.

HUYCK TEAM MEETINGS BENEFIT PAPERMAKERS

Teamwork is one of the reasons Huyck Felt Co. keeps ahead of the paper industry's changing and increasing felt requirements.

It maintains Huyck's leadership in research, development, designing, engineering and manufacturing — and, above all, assures papermakers of felts that produce better paper, and more of it, at lower felt cost per ton.

Everyday, Huyck holds team meetings. Those scheduled for today could be spent discussing the felt application problems you will be facing tomorrow.



DAILY MEETINGS of design engineering group draw on vast background of technical knowledge and experience in analyzing specific felt requirements.



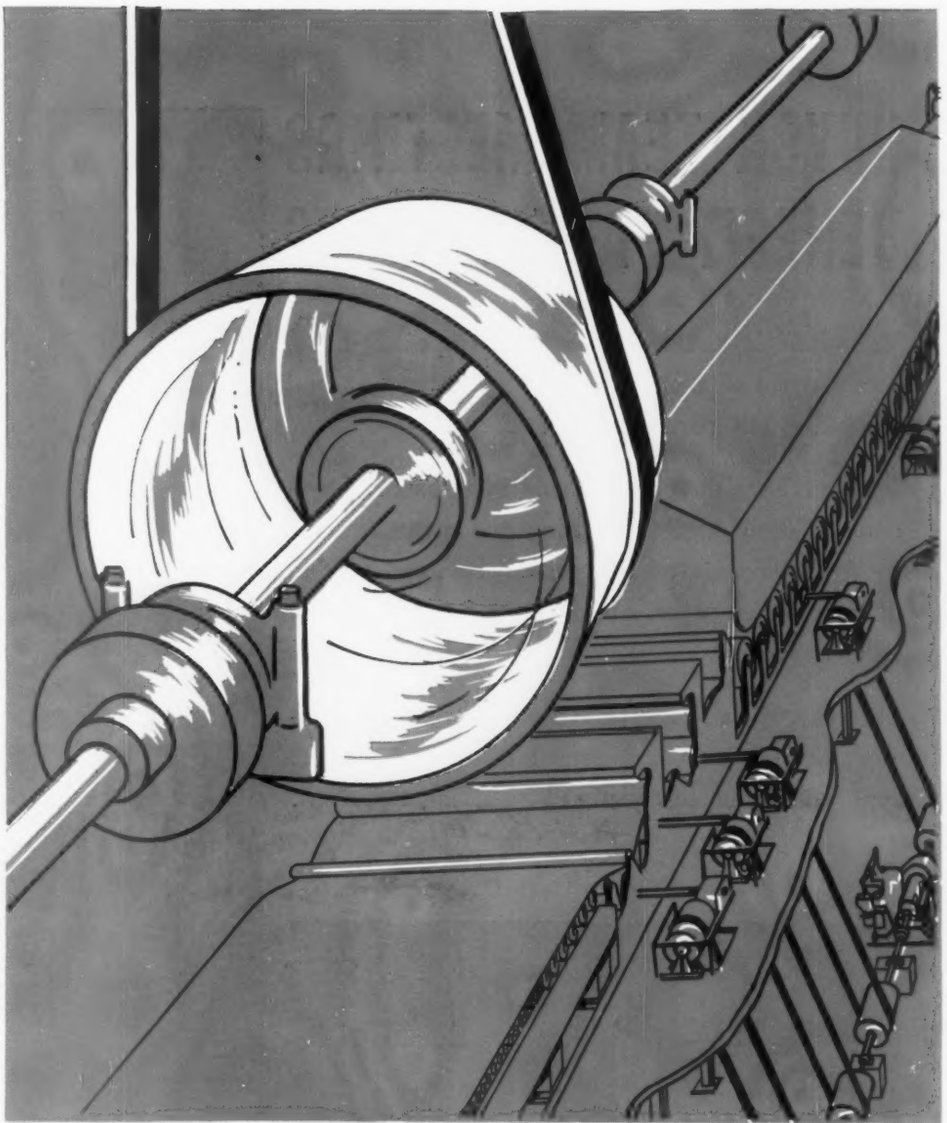
IMPROVING FELT MANUFACTURE, Huyck's machinery and equipment team meets regularly to discuss the latest advances in feltmaking equipment and plans for expansion to meet the ever-increasing demand for new Huyck felts.



FELT DEVELOPMENT TEAM captains discuss new ideas in weaving, blending of synthetics, chemical treatments — such as the famous 4-D — and new practical felt testing devices.



MANUFACTURING TEAM directs quality control, production planning, scheduling of felt shipments, manufacturing and accounting, assuring Huyck dependability felt after felt.



At Rhoads, the Job Selects the Belt

In the Rhoads' family of beltings, there is a flat belt that is exactly right for your operating conditions.

It may be Tanastic, new leather/plastic belting with a stretch-free nylon core.

It may be Texalon, new all-synthetic belting of fabric and nylon . . . elastic and almost 100% stretch-free.

It may be Tannate leather belting, the product of more than 250 years of tanning experience.

Rhoads' Engineers Consider All of the Factors Involved

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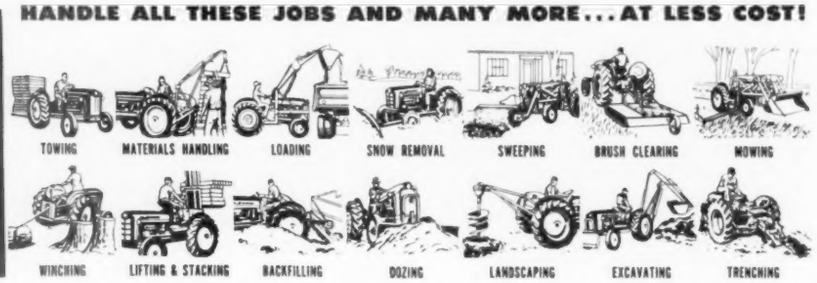
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*Less bar and chain.

A Financial Look at Forestry

APA devotes Forest Policy Forum at Paper Week to talks on forest inventories and the corporation balance sheet

• Let's face it. The forester, the woodlands manager, the tax specialist, the financial investor and the accountant, all went to different schools. Each has a language all its own and consequently communication between each has not been as effective as it could and should be.

Now, after a long, long countdown with many "holds" a sphere of better communications has been launched and was successfully orbited during Paper Week by the American Pulpwood Assn.

The Big Problem . . .

In appraising an organization's corporate health, are the forest lands to be considered as an adjunct to the manufacturing plant or a separate entity? Is it "insurance" against rising wood costs or shortages or should it be a separate profitable enterprise?

Some say the forest is a part of the whole manufacturing plant and should be treated as such—that the manufacturing picture starts with the seeds, encompasses forest lands maintenance, improvement, nurseries and fire protection.

There are many opinions. Even among woodlands managers and foresters. Some financial men look upon forest lands as another financial enterprise and measure its potential against competitive enterprise (purchasing pulpwood on the open market).

One woodlands executive put it this way. "In the mill there is often standby equipment to keep operating in case of a breakdown, power failure, etc. There will be standby pumps, storage tanks, generators, etc. In a steam plant, management will provide facilities to use alternate fuels to insure continued operation if shortages developed for one type or fuel or if costs rise too high for one.

"This is admittedly an extra expense but the alternative is to shut the mill down. It is the same story with the forest lands. A mill must maintain forests as a lateral investment as a reserve. It is an element of insurance."



THE FOREST: Is it a part of the whole manufacturing plant or is it a separate unit. Should it pay its own way or is it "insurance."

Another Viewpoint

Another woodlands man, however, insists that forest lands must be looked upon as a going operation which must bring in an income and a return to management for their investment. It should be managed as a separate entity. It should pay its way through integrated logging. For instance, in the South, sawtimber, turpentining and leased lands for sport clubs should bring in a revenue in addition to pulpwood.

One pulpwood man explains, "We are not in forestry just to plant trees or because we fear we are going to run out of timber, but to make a profit. That's my job. That's what I'm getting paid for.

"My staff wouldn't dare come in the door and say we ought to do this without telling me what we ought to get out of it.

"We have to look at timber from an economic point of view and show financial people that it requires long term planning. But we must be current in our inventory of forests. With continuous forest inventory you can be current and with proper management get the best quality of the land in the long pull. You can afford to do certain things if you have a good stand. And from the financial investor's point of view—that's important."

Outlines Basic Relations

At the APA session, Albert C. Worrell, associate professor of forest economics, Yale University School of Forestry, outlined the basic relationship between forest inventory data and profit or loss from timberland management to corporation finances.

"Wood is essential to pulp and paper and someone has to grow it," he said. "These forest properties contribute financially in three ways: they bring in direct profits from outside sales of forest products; furnish raw material for manufacturing; and may add to the value of the corporation's assets.

"High level management must make certain basic decisions regarding the management of forest properties: 'How satisfactory is the relation of our forest property to our overall raw material procurement program? How satisfactory is our overall forest investment? How efficiently are our forest properties managed?'

"Four items will give a complete picture of the financial condition of the forest properties: (1) current annual income actually earned by growing timber; (2) any change during the year in the capital value of the property; (3) total cost of operating the forests for the year, which subtracted from gross earnings, gives the net earnings of the property; (4) current value of forest properties. Such statements enable management to make decisions about forest properties.

"The information needed to describe the physical assets may be gathered by a continuous forest inventory (CFI) or by periodic inventories. The real difficulties arise in converting the physical inventory to a capital or financial inventory. Although management needs a reasonable estimate of value in making financial decisions, there is still no absolutely correct way of measuring forest values.

Accountant's Viewpoint . . .

Brandan J. Meagher, a partner in the firm of Price Waterhouse & Co., said:

"Woodlands are sometimes carried at very nominal values because of the inability to forecast the growth during an indeterminate income period. To minimize the distortion: (1) start with an accurate inventory of growing timber as of acquisition date; (2) establish and maintain a sound analysis of the asset value represented by woodlands by use of CFI or by periodic recruises."

Problems involved in determining profits, he says are: accuracy of our depletion charge; also, cutting. A majority of companies surveyed by Mr. Meagher have formed arbitrary groups for accounting purposes which closely match the groupings desired for forest management purposes.

Taxation Viewpoint . . .

Brady O. Bryson, of the law firm, Morgan, Lewis and Bockius, said:

Physical change constantly alters the condition of a property and therefore, its financial and business characteristics. Independent external economic influences also vary continuously. The interaction of these two variables, namely physical change and economic influences, make financial planning impossible without current data in adequate form.

"The financial planner is not primarily interested in what was paid for the timber. He wants to know what you have on hand, the figures at which it is appraised, what it would cost to procure it elsewhere, what it can be sold for, what it can be expected to produce and what it will cost to get the production and realize the values indicated, as well as a hard-headed evaluation of the current yield.

"Perhaps someday it will be possible to bring tax allowances for timber depletion into line with prevailing financial conditions, as would be the tendency if based on income from the property rather than historical cost. In the past the dividing line between expense and capital expenditure for tax purposes has been administered on a fairly reasonable basis. There have been signs in recent times, however, of a tightening up in this connection. It would be a shortsighted policy, indeed, for the Internal Revenue Service to disturb tax allowances which have made desirable silvicultural practices possible and which will be highly important in their continuation and expansion."

Investment Viewpoint . . .

Eli Ferguson, second vice president, Equitable Life Assurance Society of the U.S., said: "Here are procedures to exercise proper financial control and accounting for results. First, We suggest that certain records be maintained with respect to the forest properties which may be of memorandum value but reconcilable with the corporate reports and which will have the effect of (1) establishing an equitable basis for distribution of book value to the various classes of land and timber, (2) calculating depletion on the basis of this allocation, (3) allowing accrual of growth, and (4) providing working statements to show results being obtained.

"We suggest that the appraisal reflect what the various classes of land and timber could be sold for in the market. It is about the only defensible method of appraising anything.

"We are not advocating any change in corporate statements and tax accounting but for purposes of placing financial responsibility for woodlands management where it belongs—with the woodlands managers—that book value be distributed on the basis of an appraisal, depletion be calculated on that same basis, growth be accrued at the unit rates used for book value, sales be calculated at the market price with proper additional allowance for emergency cutting, and; because of the importance of time, interest be charged for all company funds used by the woodlands management." ●

Graduate Foresters Needed

There is a definite shortage of specialists and research men in the forestry profession, reports Ed Heacox, managing forester for Weyerhaeuser Timber Co., Tacoma, Wash. He says that a very serious shortage exists, particularly among the ranks of the forest pathologists, many of whom are nearing retirement age.

Mr. Heacox also predicted a greater need for management foresters in the future, based purely on the fact that more and more land is gradually coming into the status of more intensive management.

In federal service, foresters are still at a premium. E. D. Sandvig, regional personnel chief for USFS at Portland, Ore., says there were 171 jobs for graduate foresters currently open in Region 6 in 1957 and only 95 were filled.

Prof. Walt Schaeffer, college of forestry, University of Washington, Seattle, states that the last census among forestry schools showed that the most recent freshmen class had the lowest increase of any class over the previous year.

St. Regis Begins Inventory

Foresters working out of Tacoma, Wash., office of St. Regis Paper Co. have initiated a forest inventory on over 214,000 acres of company land in western Washington. Frank D. Hobi, assistant general manager, forestry division, heads the project. Aerial photos and IBM equipment will be utilized in setting up the cruise data.

New Catalog on Tractors

Major advances in design of the Allis-Chalmers HD-21 turbocharged diesel powered tractor are described in the two-color, 16-page catalog (MS-1243) now available from the Construction Machinery Div., Allis-Chalmers Mfg. Co., Milwaukee, Wis. Photographs and other illustrations point to these features and help tell the engineering and construction story of the tractor. Matched equipment and the line of accessories for the HD-21 are also pictured. Tractor specifications are included.

APA Gets List of Six Serious Problems Which Pulpwood Interests Must Solve

● A Paul Bunyan-sized job looms for the pulpwood industry if it is to produce up to some 56 million cords of pulpwood a year by 1967. While it girds for this herculean job ahead, the American Pulpwood Association meeting in New York was told the industry must first conquer some real, everyday problems right now:

1. Up production rates per man by making inexpensive logging cost studies.
2. Lower costs by stabilizing production.
3. Produce qualified industrial foresters.
4. Develop better debarking tools for hardwoods.
5. Manage forests in parallel with recreational use by public.
6. Reduce pulpwood logging work injuries.

Better Production Rates . . .

"Today's topnotch producer gets out about 400 cords per man-year. With present know-how alone a producer should be able to get out 1,000 cords per man-year in the South," said Sam Guttenberg, of the Southern Forest Experiment Station, New Orleans. His solution: inexpensive logging costs studies.

Producers should be encouraged to keep simple records from which analytical cost charts could be prepared, he said.

But until producers get bigger than they are today, detailed cost analyses will largely be the concern of pulp and paper companies.

Mr. Guttenberg says that pulp and paper companies could undertake cooperative studies with the various regional forest experiment stations who have study techniques at their fingertips. He advises companies to study some logging cost items alone to convince railroads to build improved wood racks, develop mechanize woodyards, safety programs, severance taxes and axle-weight limits for truck hauling.

Cost Problems . . .

R. R. Edgar, Bowaters Southern Paper Corp., chairmanned a panel discussion on how costs could be lowered by stabilizing production. To solve the problem, he said that a reasonable tenure of sufficient forest land by the industry is essential.

In the South, he said, the most important problem, after sufficient land is available by purchase or lease, is finding sufficient funds to put this land into full production and to keep it producing. Forest improvements are of secondary importance.

Problems in five pulpwood producing regions of the United States were outlined by Gerry A. Pesez, International Paper Co. (Northeast); Art L. Bennett, Armstrong Forest Co. (Appalachian); Tom G. Harris, Halifax Paper Co., Inc. (Southeast); E. A. Golden, Champion Paper & Fibre Co. (Southwest) and Tom R. Powell, Kimberly-Clark Corp. (Lake States).

Debarking Hardwoods . . .

Some blue-sky thinking about debarking machines of the future for hardwoods was presented by William T. Reid, asst. technical director of Battelle Memorial Institute. He said a Battelle debarking project for separating chips from barks by flotation, sponsored by some 17 Southern companies, had been successful in a pilot plant. The next step: commercial production.

Some of his "dream" suggestions:

Stripping bark from logs by an electrical discharge similar in principle to a stroke of lightning; exploding bark by applying shock waves from a controlled detonation, injecting highly superheated steam in the cambium layer, abrading the bark from the log by an ultra-high velocity blast from a simulated rocket combustor, shot peening with particles of controlled size and velocity and by dielectric heating.

Logging Injuries . . .

The injury frequency picture in pulpwood logging activities does not look good, says George R. McCormack, Bureau of Labor Statistics, U.S. Dept. of Labor. The injury frequency rate of some 8,300 pulpwood loggers surveyed in 1955 was 76.2 (2 million man hours worked), high by any standards, he said. At a time when other manufacturing industries had reduced their overall rates by some 34% down to 12.1, the pulpwood industry has shown little progress in the shift from 75.5 (1954).

The swing may be upward, Mr. McCormack challenged. Most hazardous region: Western. The worst record was chalked up by loaders (159). Fallers and buckers averaged 110.

Survey Reveals Vast Private Areas are Open to Public

APA was told over 40 million acres of industry forest lands are open to the public for outdoor activities. These are all privately owned by some 455 companies surveyed by the American Forest Products Industries, Inc.

Jim C. McClellan, chief forester of AFPI, said:

Sixty-five companies have established public parks and 31 had planned to open new parks in 1957 while 67 others had plans for such parks in the future.

Some 32,377,567 acres are open to all without permit. Some 7,437,864, with permits.

Pest Action Group to be Set Up

"It just doesn't make sense to stop all of these pesticide programs until we know more about them." Spokesmen for the Forest Industries Council, the policy-coordinating group for the American Pulpwood Assn., American Paper & Pulp Assn. and National Lumber Mfrs. Assn., said this is why they are going to establish a National Forest Pest Action Committee to give industry a strong voice in planning and coordinating public and private forest pest control programs on a national level and in determining where action is most needed.

Advises Lucian Whittle: Learn How to Communicate

Foresters talk one language, management another. And as reported elsewhere in this section, CPA's and the financial investment community, another.

That's why Lucian A. Whittle, woodlands manager of Brunswick Pulp and Paper Co., says that a forester should first learn to communicate, and should get a liberal arts education ahead of forestry.

A young man should take business administration first with such electives as communication, writing and public speaking; some psychology and sociology, suggests Mr. Whittle. Then, he should take forestry. Such a program would involve six years. Possibly two years of business administration and four of forestry. Or, says Mr. Whittle, three years of each.

"Then, we would have the type of foresters who would be equipped to become heads of these big industrial pulp and paper plants," Mr. Whittle concluded.

WHITHER THE HORSE?
He is gradually being retired from logging operations because . . .

1. Diminishing horse population
2. Increased cost of maintaining them
3. Need for greater productivity per man-day . . .



All point to . . .

Full Mechanization in the Woods

The horse is gradually disappearing from the scene at Abitibi Power & Paper Co., Ltd.'s logging operations at its Lakehead Woodlands division in Port Arthur, Ont. The 390 horses required for the 1956-57 season were reduced to 200 horses for 1957-58.

Last year 26 horses helped move 13,000 cords of pulpwood at Abitibi's new Camp 154. This year a Nelson Skidder is providing the horsepower to deliver about 15,000 cords from cutting areas to main roads.

Why the change? Because if horses were used the operation would be confined to the winter months and would require careful location and preparation of strip and haul roads for moving sleighs, and hand-loading pulpwood in cutting areas.

The skidder is essentially a slightly modified crawler tractor carrying two steel rails and a simple system of steel cables at the rear end. The cables connect to the tractor winch which draws the bundle of pulpwood off the ground and onto the rails. Thus the pulpwood is carried out to a landing on a main road and stockpiled for eventual loading on trucks.

Camp 38 north of Auden is using another substitute for the horse this season—the Johnson skidder, a crawler tractor fitted with a set of hydraulically operated arms. The operator, working alone, can pick up a cord or more of pulpwood in the cutting area and deliver it to a main road stockpile, up to 1,000 ft. away from the pickup point. Last year 46 horses performed this job; this year the Johnson skidder and 18 horses handled 9,000 cords.

For several years Abitibi's woods crews have used another method of moving pulpwood to main haul roads and loading directly on trucks—the cable yarding method. The cable yarder is essentially a specialized crane mounted on wheels.

Track-mounted and skid-mounted yarders were also put in service this year. The yarder, by means of cables secured around bundles of pulpwood, can drag or skid the bundles for distances up to 600 ft. and place them on trucks without any intermediate handling. Since 1953 Abitibi's cable



Nelson Skidder Takes Pulpwood
from cutting area to main road, attached to model D6 Caterpillar fitted with standard D6N winch and dozer blade. Attachment was developed by E. W. Nelson of Port Arthur. Abitibi fabricates skidding attachments under license from Nelson. Seven have been made by Abitibi and fitted to tractors for use this logging season.



Hydraulically Operated Arms.
A Caterpillar D6A tractor is fitted with a Johnson skidding attachment which will accommodate up to 1¼ cords of 8-ft. pulpwood for forwarding from cutting areas to main haul roads. Here, too, 500 ft. is considered maximum forwarding distance although this can be exceeded under special conditions.



Loaded from Stockpile.
Here a Caterpillar 977 Loader is fitted with a Caterpillar pulp loading fork. Abitibi is using three of these machines, as well as a Caterpillar D6 similarly equipped and a TD-14 Drott, for truck loading from main haul road stockpiles (8-ft. wood) or from 16-ft. skidways (horse-skidded).



Yarder is Crane on Wheels.
The unit above, a Timberland, is a three drum yarder mounted on a 4-wheel drive truck chassis. Of six cable yarders used in Abitibi Lakehead logging areas in 1957-58, two are truck mounted, one is skid-mounted and one is track-mounted (the Timberland Mobile Yarder).

yarders have handled 127,000 cords of pulpwood in the Wolf River and Auden operating areas.

With increased use of mechanical equipment in every phase of woodlands operations and with new and better types of equipment becoming available, it is clear that the horse will soon disappear completely.

Why and How IP Reorganized its Woodlands

What happens when an organization gets too big? International Paper Co.'s southern Kraft Div. woodlands department found out, and has completely reorganized to solve the problem.

Always a smooth-working organization, the woodlands dept. was nonetheless 20 years old, was facing additional demands from new machines at Mobile and the new newsprint mill at Pine Bluff, Ark.

The answer: Give man on the ground more authority, insure prompt handling of things on the spot, combine jobs such as procurement and timber management when the combination would tighten up the overall operation. As a result of a survey by five veteran IPmen, a great deal of the division's woodland operations are being handled through five men—IP's regional managers. To them has fallen responsibility for the flow of some six million cords of pulpwood a year into the ten IP mills in the South, plus management of four million acres of timberland, a sizable job.

Considerable work once done at division headquarters in Mobile is now handled on the spot by the field managers and their staffs. This includes purchase and payment for pulpwood, once handled on an end-of-the-month basis at Mobile.

Division will continue to coordinate the work of each region, set department policy and exercise legal, public relations and financial controls.

In setting up its five regions, IP considered transportation, volume of wood required of each mill, area of lands to be managed, and competition with other companies within a region.

This was also true in splitting up each region into operating divisions. Each of the five regional managers has a staff which includes an operations supt., in charge of wood procurement; a regional forester, in charge of land management; an office manager, for accounting; a technical supervisor, in charge of details on such things as timber cruising, scaling, etc.; a conservation forester.

H. H. Flickinger is in charge of the Georgetown, S. C., region; W. M. Bailey, Panama City, Fla.; R. S. Andrews, Gulf region at Mobile; D. V. Logan, Delta region at Natchez and F. C. Gragg, Western region at Camden, Ark.

Earl Porter, Southern Kraft division woodlands manager, continues to direct the activities of the regional setup, working directly under vice president and general manager in charge of woodlands, James E. McCaffrey.



McCaffrey Porter Gragg Logan Flickinger Bailey Andrews





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Watch Costs, Ontario Group Warned . . . New Trends in Woods Camps are Reported

A warning not to "allow costs to again overtake us as has happened in the past" was sounded at the recent annual meeting of the Northwestern Ontario Timber Operators' meeting. H. H. (Bert) Styffe, retiring president, made the statement, while declaring the woods industry generally is in a healthy state and "we are still optimistic regarding the future."

P. V. LeMay, woods manager for Marathon Corp. of Canada, was elected new president. Elected to the executive committee were D. C. Clark, H. S. Mosher, M. McLaggan and M. Cochran, of Port Arthur; A. M. Jones, Nipigon; J. H. Merrill, Fort William; W. Thom, Terrace Bay, and G. A. Potts, Fort Frances.

Clare E. Mapledorum, Ontario minister of lands and forests, said this year's phase of the government forest regeneration plan calls for enlisting cooperation of crown lands licensees. He introduced A. S. Bray, his department's new regional director for Northwestern Ontario.

R. A. Hallonquist, re-elected secretary-manager, reported a recent woods production survey of member companies, operating east of the Algoma Central Railway to the Manitoba boundary, revealed that over 2,365,000 cords of pulpwood would be produced this season. While this figure is approximately 10% lower than the pulpwood produced in 1956-57, the production of railway ties this season will be almost double (close to 400,000 ties).

New Trends in Woods

He reported a trend towards longer operating seasons and further development of "family camps" as well as advances in mechanization was having a far-reaching effect on the growth and economy of Northwestern Ontario.

He reported a change in camps accessible to main highways. More and more private cars owned by employes are now seen in camp areas and the majority of the men leave camp over weekends to go to their homes or to adjacent towns or cities. This is having a profound effect on the economy of those towns and cities. This movement out of camps is lessening the need for recreational activities in camps but in some areas within range, TV sets have been set up. The mobile x-ray unit of the Northwestern Ontario Chest Clinic had again been active, having x-rayed 3,675 workmen in woods camps.

He reported 6 definite TB cases had been found and hospitalized. A further 13 cases were to have further x-rays.

F. S. Hick, chairman of the Association's forest protection committee reported that in 1957 there were 1,671 forest fires in Ontario which burned over or damaged an area of 46,631 acres, compared to 1,017 fires in 1956 which destroyed 226,212 acres. •



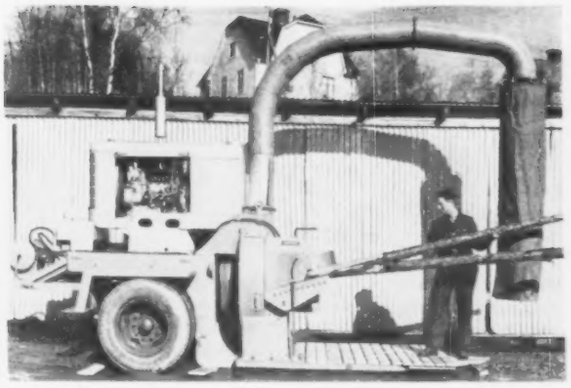
HORSE - DRAWN SKID BRINGS WOOD to portable chipper in the forest. Chipper was developed by Maskinfabriken, Ornskoldsvik, Swedish manufacturers of sawmill machinery.

Portable Chipper Effects Savings in Swedish Forests

A novel portable chipper which can be mounted on a truck or tractor and transported into forests for on-the-spot chipping has been developed by E. A. Nyholm, managing director of Maskinfabriken, Ornskoldsvik, Swedish manufacturers of sawmill machinery. It has been tested successfully by Mo and Domjo, large Swedish pulp and paper company.

The machine, driven by a 50 hp diesel engine, receives untrimmed wood, including twigs and leaves or needles, chips it and deposits it in a truck or storage heap. Litter on the ground can be included without harming the quality of the pulp. The Swedish Central Research Laboratory of the Wallboard and Pulp Industries reports the chips are especially good.





PORTABLE CHIPPER TAKES TWIGS, NEEDLES, LEAVES . . . and separates chips. Developed in Sweden, it has become popular there for cleaning and thinning in the forest. Infeed is slightly inclined and has a mat of small rifled rollers below a large rifled feeding roller. Five fence arms mounted on feeding roller shaft force wood to be fed more or less perpendicularly into knives. Action of heavy cutting wheel with two knives of special steel blows chips up a shaft and into truck. Chipper can take any size wood up to 6 in. in diameter.

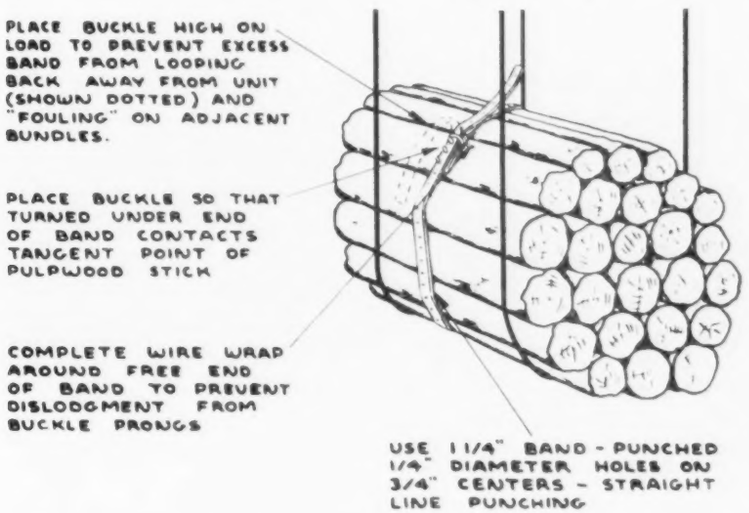
for making wallboard and pulp.

The machine eliminates trimming, saves transportation space and does away with several loading and unloading jobs. The chipped wood goes directly from clearing to digester, leaving the felling area swept clean.

It is reported that total costs including transportation have been reduced to about $0.01 per cu. ft. in Sweden, less than that of trimming alone. Feeding the machine takes about half the trimming time.

The chippers have also been installed as stationary machines in Swedish sawmills so that a conveyor feeds waste from the sawmill directly into the chipper.

New Design for Steel Banding of Pulpwood



Bands of perforated steel strapping and an oblong steel plate with prongs are being used to speed up the pulpwood storage operation at International Paper Co.'s Olla, La., mechanized rail yard.

Use of this new type banding permits application or removal in 3 to 4 seconds as against an average time of 30 seconds when the conventional steel strapping with buckle is used. Frank Terral, of International Paper Co., who cooperated with Acme Steel Co. of Chicago in this development, reported the transfer of 235 cords of pulpwood from storage to rack car in 7 hours by a crew of three men and a rubber-tired crane.

The new method uses punched 1¼ in. by .035 in. heavy duty Acme Steel Strapping and a rectangular shaped three prong steel buckle.

The strapping is purchased in coils and is cut in lengths 12 to 18 in. greater than the circumference of the largest bundle.

It has been found that this new buckle with its three prongs can safely overcome the sheer force created by heavy green pulpwood in bundles as large as 1.70 cords. With bundles exceeding this size, the addition of one more buckle assures that bundles are safely contained, since six prongs are then employed instead of three.

To contain a bundle of pulpwood, it is merely a matter of placing a strap about the bundle while it is firmly held by the slings of the pulpwood loader, inserting the buckle in the perforations of the top overlapping layer of strapping, and holding the strapping in position until it takes on tension from the expanding wood as the loader slings are slackened.

The principal advantage of this technique of bundling pulpwood stems from the fact that there is no bending, threading or unthreading of strapping. This results not only in faster application and removal, but also in a longer useful life of the bands.

To minimize required storage area, it is suggested bundles be strapped to prevent excessive spreading. Units held in shape by strapping are more easily encompassed by slings when loading out. Some operators are reported using two straps around end bundles as additional factors of safety.

Further information can be obtained from Acme Steel Co., 135th St. & Perry Ave., Chicago 27, Ill.

New Harvester Loads 4 Cords an Hour

A new machine—the Harrison Pulpwood Harvester—promises to aid solution of the South's major problem in pulpwood procurement: decreasing manpower coupled with increased mill demands.

Design of this machine permits one operator to sustain a loading production rate equal to the performance of "Three of the best hand loaders in the South." The prototype operated steadily for six weeks prior to its initial demonstration and handled more than 400 cords of wood during that time. It demonstrated the ability to load sustained rate of four cords per hour—32 cords per man/day.

A Huge Arm . . .

The Harvester looks like a huge mechanical arm with a three-fingered hand. Mounted on a modified four-wheel tractor equipped with a pallet cart, the arm reaches out and its fingers pluck pulpwood sticks from the ground, load them and the tractor then transports a fully-loaded pallet to the roadside for easy, swift pickup by pulpwood trucks.

The machine was designed and built by Gaines W. Harrison, long recognized as one of Dixie's shrewdest brains when it comes to developing new equipment, and by International Paper's Carl Brown, chief of wood procurement at Georgetown, S.C. The Harvester is culmination of a two-year quest by Southern woodlands men for a machine which might insure as much as 20-cord daily production, or increase their production by 100 cords a week.

The Harvester is a conventional farm tractor with front wheels removed and the quick-acting loader mounted behind the operator with position-operating controls. Timber is felled by chain saw, limbed by a second man with an axe and the Harvester then loads wood into the 1.6 cord pallet. Pallet is then delivered to the roadside for pickup by conventional pulpwood truck.

The Harvester can load the pallet in about 15 minutes.

How Machine Works . . .

The grapple "forearm" is controlled by a hydraulic motor which enables it to be rotated on its axis. The arm can sweep about 120 degrees behind the tractor and has a maximum pickup distance of 14 feet.

Production models are mounted on a 48 hp Super 77 Oliver tractor equipped with a torque converter. A 20 gpm hydraulic pump is powered directly from the crankshaft and is used to operate the pickup arm. The two-wheeled tractor has these advantages over the conventional four-wheel tractor: Because it has no front wheels, weight is concentrated on drive wheels and traction is thus improved; it has a greatly reduced turning area; by use of tractor's steering, lineage can be applied against the cart and frequently one wheel, then the other, can be lifted out of bogged areas.

The 18 ft. grapple is capable of picking up logs up to 24 inches in dia. or small piles of sticks.

Because the truck doesn't have to leave the road this machine will save wear on the truck as well as lost time when trucks get bogged down. Runs to the woodyard will be increased. A saw operator, limber, Harvester operator and truck driver can produce the same amount of wood in less time than it formerly took seven men, says Mr. Holekamp.

The Harvester sells for $8,975 f.o.b. Columbia, S.C. Mr. Harrison believes that through increased production, manpower savings, it could pay for itself in as little as four months.



INVENTORS of new Harvester are Columbia, S.C., manufacturer G. W. Harrison, left, and I.P.'s Carl Brown.



HYDRAULIC ARM IN ACTION here picks up three pulpwood sticks. It has conservative loading rate of two cords an hour, other advantages like maneuverability.



PALLET IS LOADED by arm which pulls it easily into pallet cart located behind modified Oliver Super 77 tractor. It can fill 1.6 cord pallet in about 15 minutes.



Different phases of forest site preparation were the object of a series of studies this past year in a three months' experiment near Brunswick, Ga. Caterpillar Tractor Co. and the Brunswick Pulp & Paper Co. conducted the studies. One phase covered "Tree and Stump Shearing" with a Caterpillar D8 Tractor equipped with a Rome K-G shearing blade. This blade, mounted on a C-frame to form a 28.5-degree angle with the front of a tractor, has a stinger on its left end which projects about 30 inches beyond the blade itself. The stinger, made of armor plate, is extremely sharp.

The husky 191 flywheel HP D8 worked an area of dry sandy soil, cleared and windrowed except for standing live oak trees that ranged in diameter from 18 to 81 inches. Able to exert about 24,000 pounds of push at the point of the stinger, the D8 hit various trees at a height of 3 to 5 feet above ground level. The stinger pierced and weakened the tree trunks, and the sharp cutting edge and 28° angle sheared the wood, making it possible to push the trees over. Then, by using the stinger and cutting edge in one pass or several, the D8 sheared the stump tops at ground level.

See your Caterpillar Dealer for complete information on this operation as well as other phases of the experimental studies such as: raking and windrowing, chaining, stump treatment, and harrowing.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

HEAVY-DUTY
WOODS EQUIPMENT
FOR THE HARD WORK

Protest Tax Group's Evaluation of Timber

Consulting foresters and timber owners attending meeting of the Oregon legislative interim tax committee protested the tax commission's valuation of forest products under the state's forest fee and yield tax provisions. Verne D. Bronson, chief forester of Tree Farm Management Service, Inc., Eugene consulting forester firm, recommended return of permit issuance and evaluating to the forestry department—which handled same until 1953. This department, he pointed out, "is already set up to perform such duties. Its personnel has a better conception of forest values and has men over the state who know local conditions better than is possible for a few men working out of Salem (state capital)."

One tree farm operator testified that although he could buy alder stumpage at $2 per M from U.S. Forest Service, the Oregon tax commission set a $5 evaluation on some of this owner's alder.

IP Opens New Forest Research Center near Bainbridge, Ga.

International Paper Co. has added its first experimental forest in the South to a forest family which already includes sylva research stations at Causapscal and Harrington, Que., and Phillips Brook, N.H.

The 15,000 acre research center near Bainbridge, Ga., on Lake Seminole, will be devoted to forest and land management research. Its director, Dr. Charles H. Driver, a native of Orlando, Fla., is a graduate of the University of Georgia forestry school and holds a ph.d. from Louisiana State University. Dr. Franklin C. Cech, graduate of Montana State University and Texas A & M, is research silviculturist and Kenneth Maxwell, University of Florida alumnus, is forest manager.

One of the major aims of the center is development of new strains of Southern tree species as well as stabilizing strains of trees with unusual resistance to disease, insects and drought, also improved fibers.

The experimental forest was formally dedicated by Georgia's Sen. Herman Talmadge, assisted by International Paper Co. Pres., R. C. Doane and Mrs. Doane; Erling Riis, v.p. and general manager of the Southern Kraft Division; A. L. Ross, v.p. and asst. general manager of Southern Kraft; J. E. McCaffrey, v.p. and asst. general manager in charge of Southern Kraft Woodlands and Dr. Driver.

Cure for Dutch Elm Disease?

Soil starvation is the cause of Dutch elm disease, oak wilt, chestnut blight and other tree epidemics, agronomist J. David Larson of Hinsdale, Ill., told the Ohio Forestry Assn. at its 55th annual convention.

OFA officials said the subject was controversial, but they booked the paper for what it might be worth.

Mr. Larson said 70 diseased elms in Shaker Heights had survived after applications of his patented "man-made virgin soil." Blight-free American chestnuts are being grown in the soil in five nurseries in Canada, he said, and diseased elms, oaks and sycamores were brought back to full leaf in several cities. His theory is that disease strikes only when the soil has been depleted of certain element. He described his "normal soil" as a mixture of pulverized rock, gypsum, clay and organic matter.

W. H. Hildebrand, northern area forest mgr., Mead Corp., Chillicothe, O., is president of OFA.

Forestry in the U.S.A. Federal Budget

(Fiscal Year ending June 30, 1959)

U. S. FOREST SERVICE	*1958 Estimated*	*1959 Budget*
Forest Protection and Utilization		
Timber sales adm. and mgt.	12,505,000	12,505,000
Reforestation and stand imp.	2,185,000	2,185,000
Recreation and public use	8,020,000	8,020,000
Wildlife habitat management	510,000	510,000
Range management	1,570,000	1,570,000
Range revegetation	1,190,000	1,190,000
Range improvements	1,300,000	1,300,000
Soil and Water management	810,000	810,000
Mineral claims, leases, etc.	3,180,000	3,180,000
District ranger activities	7,050,000	6,982,000
Land utilization projects	1,090,000	1,090,000
Protection—fire	11,300,000	11,300,000
Structural Improvements	7,110,000	8,110,000
Fighting Forest Fires	5,000,000[a]	5,000,000
Insect and Disease Control	5,205,000	5,205,000
Acquisition (Weeks Act)	100,000	100,000
Acquisition (Cache National Forest)	50,000	50,000
Acquisition (Superior National Forest)	300,000	300,000
Acquisition (Special Acts)	10,000	10,000
Research (Forest and range mgt.)	5,580,000	5,573,000
Research (Fire control)	641,500	641,500
Research (Insect)	805,900	805,900
Research (Disease)	692,600	692,600
Research (Forest Products)	2,215,000	2,215,000
Research (Forest Survey)	1,406,300	1,406,300
Research (Economic)	393,700	393,700
Roads and Trails (const. and maint.)	34,274,500	33,887,500[b]
Indefinite Appropriations	42,875,100	42,875,100[c]
State and Private Forestry		
Forest Fire Control	10,043,000	10,043,000
Tree planting	1,258,000	258,000
Forest mgt. and processing	1,510,000	1,510,000
General forestry assistance	384,000	384,000
Assistance to States (Tree Planting)	500,000[d]	—
TOTAL U. S. FOREST SERVICE	162,791,100	159,714,000

[a] To be increased by a supplemental request for an additional $4,000,000.
[b] In addition about $10,788,500 will be available from road and trail fund.
[c] Includes school fund payments, slash disposal refunds, payments to states, etc.
[d] Agriculture Act of 1956—subsidies to states for tree planting.



This 30-ton capacity American 300 Series Self Propelled Crane transfers up to 7½ tons of pulpwood from truck to flatcar on every cycle—unloads a truck in 3 minutes! "Fast, efficient, dependable and mobile" sums up owner and operator comments about the complete American line of Cranes and Excavators.



Working a clamshell bucket is just one of many jobs American Locomotive Cranes handle with cost-saving efficiency. This self contained crane also works with hook, magnet, orange peel or grapple fronts—has power to switch railroad cars, too!

TRIGGER FAST AIR CONTROLS BOOST CRANE'S OUTPUT 20%

Fast, highly responsive air controls actually increase the daily production output of big American DiesELectric* Locomotive Cranes by 20%! Leading firms in the country's heavy industries have swung to American for their volume materials handling jobs. These cost-conscious firms have learned that the American's patented diesel-electric power system cuts operating costs sharply. Electrically driven trucks provide smooth switching and car spotting power while reducing maintenance costs up to 50%! Dependable diesel power on the machinery deck results in low cost materials handling power.

A variety of fronts . . . hook, clamshell, magnet, orange peel or grapple . . . provides every industry with a versatile, heavy duty, high production machine that will pay for itself in a hurry.

If you're interested in boosting handling volume while trimming costs, investigate American's new concept in crane design—the DiesELectric Locomotive Crane! Specifications on this complete line offering capacities from 25 to 130 tons are available immediately by writing:

*trademark

EXCAVATORS - CRANES
to 2 yds. - 50 tons
LOCOMOTIVE CRANES
to 130 tons
DERRICKS - HOISTS
to 800 tons
REVOLVER CRANES
to 400 tons

AMERICAN HOIST
and Derrick Company
St. Paul 7, Minnesota

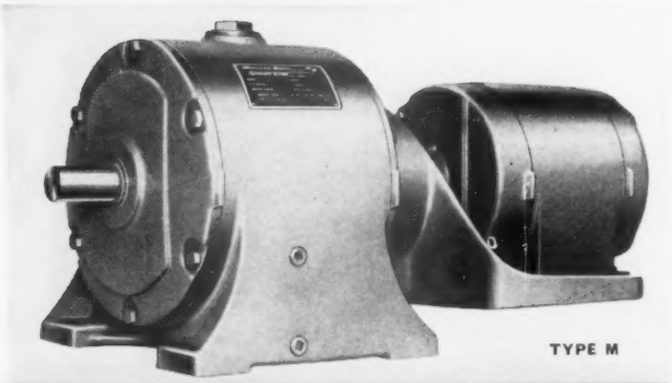
AMERICAN HOIST PACIFIC COMPANY
Special materials handling equipment

CROSBY-LAUGHLIN DIVISION
Drop forged fittings for wire rope-chain

A limited number of locomotive cranes available for rental service

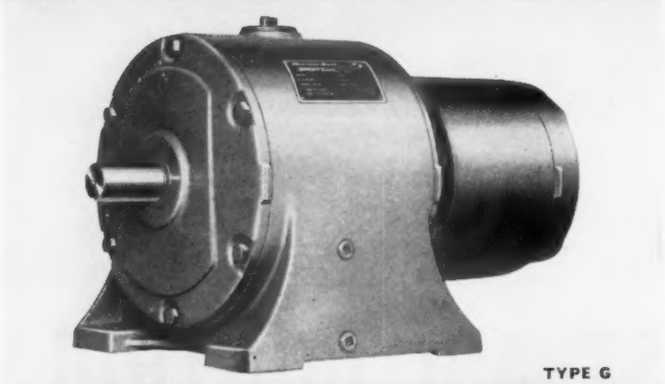
MARKETING BULLETIN

Important Gearmotor Announcement



TYPE M

Customer-proved and -preferred advantages of this Western Gear all-motor gearmotor include: easy motor replacement; straddle-mounted high speed pinion for precision alignment; balanced heat treat to ensure long life; extra large inspection cap that eliminates removing end bells for inspection.



TYPE G

Utmost compactness is the first obvious advantage of the Western Gear integral gearmotor. Other superior points include: shank-type pinion that provides maximum strength and concentricity; precision-machined adapter that assures accurate alignment; double output shaft seal to keep oil in and foreign materials out; wide bearing spacing allowing maximum overhung loads.



Western Gear integral and all-motor gearmotors are companion products which may be converted, right in the field, simply by interchanging motor packages. Ratios changed easily and quickly, too, with no special tools. This unique advantage is of greatest importance when unforeseen requirements for different speeds or motor packages arise in the field.

Western Gear now marketing own line of gearmotors, products of 25 years of proved and preferred production for major motor manufacturers.

Western Gear Corporation announces the design, manufacture and marketing of its line of StraitLine integral and all-motor gearmotors ranging from 1 to 60 HP and from 9 to 520 RPM.

The StraitLine gearmotor combines all the best customer-preferred features proved through 25 years of manufacture for a major motor manufacturer.

Western Gear has designed its line of gearmotors utilizing the "building block" principle. This results in a minimum renewal parts inventory because of parts standardization, and in a high degree of interchangeability. Motor packages and gear sets are easily interchanged, and ratios changed simply and quickly, right in the field.

StraitLine gearmotors, both integral and all-motor, are available for immediate delivery in a wide variety of sizes and reductions, through Western Gear's district sales offices, representatives and distributors.

Glenn Malme • **Western Gear Corporation** PP
P. O. Box 182 • Lynwood, California

Please send me information on StraitLine Gearmotors.

name _____

title _____

company _____

address _____

city _____ state _____

See your Western Gear Man in all principal cities about StraitLine gearmotors.

"The difference is reliability" • Since 1888 5803

WESTERN GEAR *Corporation*
ENGINEERS AND MANUFACTURERS

Strictly Personal

Northeast

Memo from MRC

Promotions from Eastern Corp., which will be starting up its new bleached sulfate pulp mill this spring: DONALD G. GRIFFEE to resident mgr. of pulp and paper manufacturing in Lincoln, Maine. He's a U. of Maine grad (b.s. mechanical engineering), joined Eastern in 1946. EBEN M. WHITCOMB, JR., to tech. service engineer to coordinate South Brewer and Lincoln mill activities with customer requirements. EMERSON LEWIS to mgr. of materials handling (new post) for warehouse, shipping, inter-mill trucking between mills. PAUL L. COUGHLIN to quality control supt. (new post) for both mills. EVANDER T. QUIRION to paper making supt., and CARL O. WEDIN to sulfite supt., both at South Brewer mill. . . .

WILLIAM GEISLER is now president of American Seal-Kap of New York, succeeding DANIEL A. MACKIN, chairman. JAMES STARKWEATHER, formerly with Great Northern Paper Co., now heads pulp and paper engineering for Ebasco Services, Inc. . . .

W. KENNETH BREW is asst. executive secretary of American Paper & Pulp Assn. He succeeds BOB O'CONNOR who is now executive secretary. Mr. Brew has 20 years in paper, latest being general sales mgr., Royal Lace Paper Div., Eastern Corp. He's a business grad of Western U. and Dartmouth, took graduate law at John Marshall School. . . .



Arlie G. Smith, President Of John A. Manning Paper Co.

Mr. Smith succeeds James F. Adams, who becomes chairman of the company, which operates two paper mills at Troy, N.Y. ALBERT S. LORING, former vice pres. is now vice chairman and consultant to the president. ROLAND EUSTACE was elected first vice pres. ROBERT J. HAYES, general sales mgr., is new vice pres.-sales. CHARLES E. LANYON, research director, is vice pres.-research. W. H. MANNING was elected secy. Mr. Smith, who is 46, was born in Crescent, Okla., and educated at Washburn College and Harvard B. A. School.



How Do I Know What He Means—Maybe He's Hungry!

JOSEPH T. O'GORMAN has been appointed to the technical sales and service staff of St. Regis Kraft Division . . . headquarters at N.Y. FRED HAILE is now group leader of paper making in tech service to manufacturing for St. Regis Paper Co. in Deferiet, N.Y., and GINO M. ZANDO is now technical assistant in the manufacturing group. . . . VAN ORMAN is supt., coating dept., S. D. Warren Co., succeeding ALBERT VERRILL, who retired.

LOUIS T. COOK died after a heart attack suffered when his car was disabled in the snow storm last February that paralyzed the East Coast. He was president of National Casein Co. . . .

JAMES M. KNOX is exec v.p. and treasurer and DR. H. J. WHITE, secretary, Research-Cottrell, Inc. . . . ERIC NORMAN has been promoted to sales manager, B. F. Perkins Co. He also says that his counterpart in the South, BEN TROTTER and the Mrs. are expecting their fourth girl. Time will tell. . . . PHIL TALIPS, formerly tech. director with Morris Paper Board Co., Inc., has joined West Virginia Pulp and Paper Co., in tech service. . . .

University of Maine alumni at Paper Week presented their annual Pulp and Paper Foundation honor award to Dean ASHLEY S. CAMPBELL, who served as head of Maine's engineering college from 1950 to 1957. Dr. Campbell is currently dean of the College of Engineering at Tufts U.

DON MITCHEL has joined Fitchburg Paper Co. as chemist and production supervisor. . . . EMERSON N. GLAUNER SR., Black-Clawson's paper machine div., and L. PAUL ELLISON and JACK FORBES, Shartle Div., have moved their Downingtown address to 31 Manor Ave. Phone is the same, Andrews 9-0500. . . . AL WILSON, editor of S. D. Warren's Standard, brings a good point home in a recent issue, "One inch of coated paper torn off one average roll costs us one man's pay for one week." And Fitchburg Paper Co's, Fitchco-Deco News, edited by ARTHUR M. HILLERY, has a feature, "What Does it Cost? Can You Guess?" Sample: a truckload of pulp (ans. $41.50 per bale or about $2,000 for the load). . . .

Midwest

Memo from DGC

WILLIAM A. J. MITCHELL, president, announces the following promotions in Central States Engineering Inc., 1000 West College Ave., Appleton, Wis., consultants to the pulp and paper industry: ROBERT L. VAN HAGAN, chief engineer; G. W. BOWLES, staff electrical engineer; L. L. KLINGER, staff process engineer, T. FRED GORGENSON, staff structural engineer.

Central States Engineering, Inc., is celebrating its 12th year as a consulting firm. It has now a technical staff of five and an engineering department of 19, and serves not only continental United States but includes Europe and Latin America. . . .

CHARLES F. CHAPLIN has tendered his resignation as president of the Allied



Frothingham Now Consultant

Frank F. Frothingham is retiring as vice president of Bird Machine Co., South Walpole, Mass., but will remain with the company in a consulting capacity. His knowledge of and experience with application of Bird pulp and paper machinery will continue to be available. Before making headquarters at South Walpole as v.p. in charge of pulp and paper machinery sales, he was for many years manager of western sales, operating from the Evanston, Ill. office. Henry H. Shepherd, general sales mgr., and Alexander Jenkins, mgr of pulp and paper machinery sales, assume customer responsibilities formerly carried by Mr. Frothingham.

Strictly Personal

Paper Corp., in order to run for president of the Cook County Board (Chicago and environs). He will continue his long association with Allied as vice president and director, giving attention to special sales and marketing problems. . . .

Changes at Northwest Paper Co., Cloquet, Minn.: JOE J. JENKINS, mgr. of finishing and shipping, transferred to general sales office as sales representative; PHILIP W. BUDD becomes mgr. of finishing and shipping and continues as mgr. of sales service dept.; L. J. HUBBELL, formerly asst. supervisor, becomes supt. of Cloquet mill beater room. At the Brainerd mill, DWIGHT M. BROWER, formerly asst. to mgr. of industrial service at Cloquet, becomes supervisor of industrial service at Brainerd; ROBERT R. WATKINS, previously admin. asst. to mgr. of Cloquet finishing and shipping, becomes supt. of Brainerd finishing and shipping; and BURDELL L. LOWER, formerly tech. asst. to Cloquet supervisor of beater rooms, becomes supervisor of tech. service at Brainerd. . . .



Mace Harris is now Mgr. of all Operations for Northwest Paper Co.

MACE V. HARRIS, vice president, now has overall responsibility for both wood supply and pulp and paper mfg., announces President HARRY T. KENDALL JR. ROY I. NILSON succeeds Mr. Harris as mgr. of mfg. He is also a vice pres. These changes followed retirement of FRANK A. KELLY, v.p. and mgr. of lands and timber. W. M. MACCONNACHIE JR., asst. secy., becomes mgr. of lands and timber.

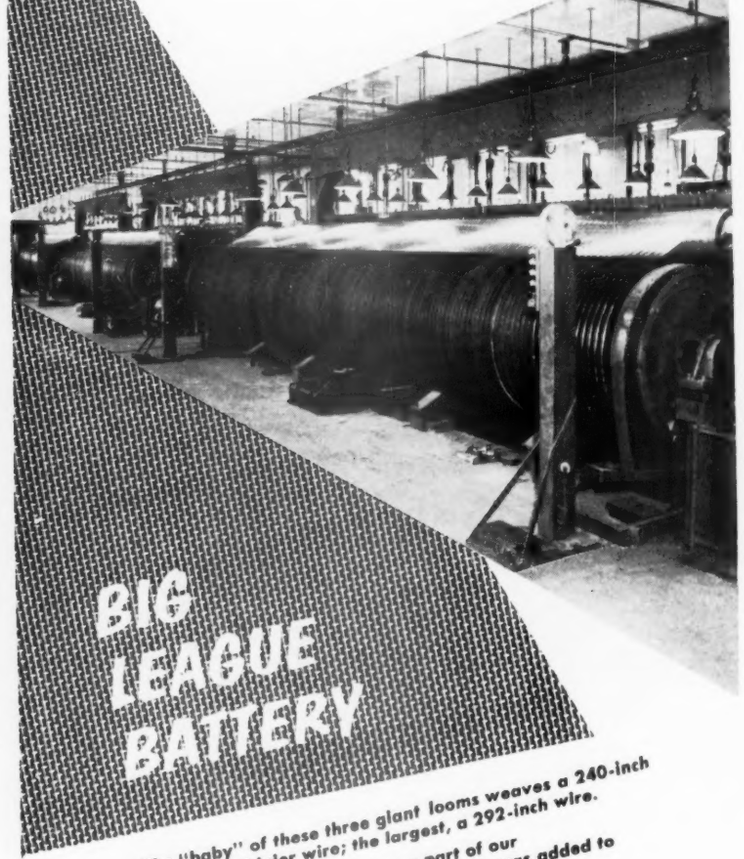
B. F. AVERY was appointed vice chairman, E. NORVAL HUNTER was named pres. and D. P. BEST vice pres. of Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich. . . . Two new faces at Wisconsin Rapids div. of Consolidated Water Power & Paper Co. are EDWARD WEINFURTER, training supervisor for new semichemical recovery plant now under construction, and WILLIAM E. ANDERSON, mill chemist. Mr. Weinfurter had retired as Nekoosa, Wis., mill pulp supt.

RALPH H. KEMMERER, personnel director of Kingsport, Tenn., div. of The Mead Corp., was promoted to new position of director of industrial relations of Mead's wholly owned subsidiary, Mead



C. L. Dostal, V. P. of Mfg., Thilmany

Mr. Dostal succeeds C. R. Seaborne in this post, with Mr. Seaborne remaining executive vice president. Mr. Dostal has been a director of Thilmany Pulp & Paper Co. since 1955, and was general sales manager prior to his most recent position of assistant to the executive vice president. Before joining Thilmany, he served three years as a supply and disbursing officer in the Navy during World War II. He previously had been assistant to the president of Ward Wheelock Co., a Philadelphia advertising agency. He graduated with honors from Amherst College and obtained his masters at Dartmouth College.



The "baby" of these three giant looms weaves a 240-inch width fourdrinier wire; the largest, a 292-inch wire.

This latest battery of looms — part of our continuing modernization program, — was added to serve the demand for increasingly large wires.

However, much smaller wires are still important to the greater part of the paper manufacturing industry, and our efforts are directed to producing — regardless of size — the very finest wires our 79 years of experience allow us.

EASTWOOD-NEALLEY CORP. BELLEVILLE NEW JERSEY





Zink ..... DeVitt

Promotions in Hammermill

Appointments of John D. Zink as senior vice president and of John H. DeVitt as asst. gen. mgr. of Hammermill Paper Co., is announced by President and Gen. Mgr. Donald S. Leslie. Mr. Zink will continue as director of merchandising and as a director and member of the executive committee. Mr. DeVitt continues as treasurer of the Erie, Pa., company and as a director. Both will report directly to Mr. Leslie.

Containers, Inc., Cincinnati, O. Mr. Kemmerer graduated from Ohio State U. in 1942. . . .

E. F. Greiwe was appointed mgr. of the Norwood (Ohio) Works centrifugal pump dept. of Allis-Chalmers, succeeding M. L. Murdock, resigned. . . .

Mrs. Evangeline H. Bergstrom, widow of the late John N. Bergstrom, co-founder of the Bergstrom Paper Co., died recently at the age of 85. . . . Charles L. Bauer, former pres. and gen. mgr., The Bauer Bros. Co., Springfield, O., died Jan. 25. He was 86.

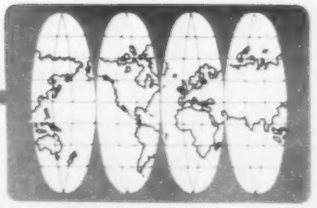
Officers of the Indiana District of TAPPI, organized recently under the sponsorship of the Ohio Section, are: H. O. Ware, chairman; W. D. Boggess, vice chairman; C. E. Eberly, vice chairman; J. S. Sullivan, secy; and Cushing Roth, treas.

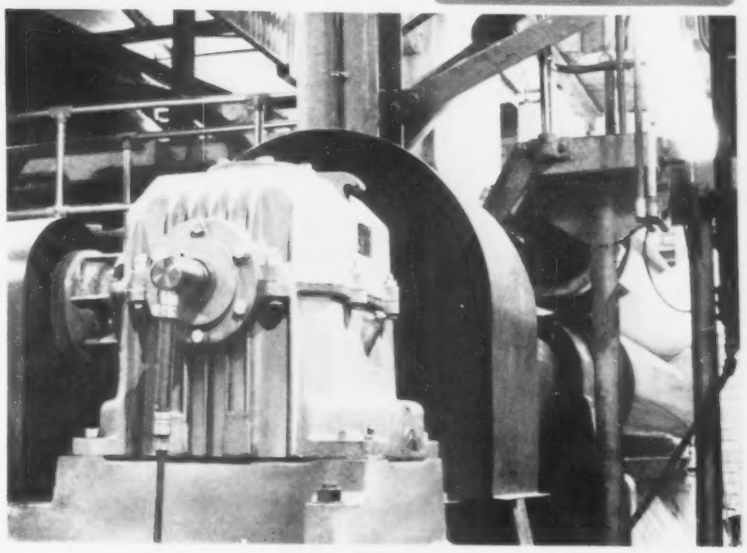
John W. Swanson, senior research associate and head of the physical dept., The Institute of Paper Chemistry, addressing the February meeting of Ohio TAPPI, said loss of absorbency of woodpulp papers by aging apparently involves a redistribution of resinous constituents on fiber surfaces. Mal Lyon, of Champion, is chairman of the group. Other officers present: J. P. Strickler, Miami Valley Coated Paper Co.; Frank Cessna, Sorg Paper; James L. Dickersheid, Champion, and William Dietz, DuPont Pigments. . . .

Robert A. Larson is new technical supt., Allied Paper Corp., Kalamazoo. He was with National Gypsum. . . . Don MacLaurin, formerly of Institute of Paper Chemistry staff and with Powell River Co., is new general supt. at Gilbert Paper Co. He was promoted from technical director. . . . Delbert C. Mayer is director of engineering for Diamond Gardner Corp. at Middletown, O. . . .

DAVID BROWN

at work
around the world





This Canadian installation is typical of the cooperative service of David Brown companies around the world. Write for details.

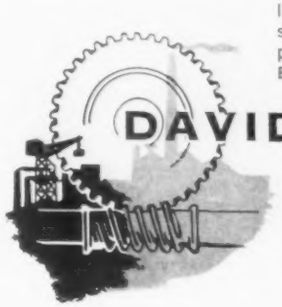
...HELPING TO SMOOTH THE WORK OF A SMOOTHING PRESS!

It always matters how you gear a new installation such as this smoothing press at Rolland Paper Company's St. Jerome, Quebec mill. The gear in this case is a David Brown 17" spiral bevel unit — one of many used on the new machines by Millspaugh, famous for paper industry equipment.

This modern right angle drive installation can run continuously, hour after hour. Its 4 to 1 ratio will transmit 200 hp at 2,000 rpm pinion speed — with a high (98%) efficiency. These compact and sturdy spiral bevel gears are made in sizes from 6" to 60" by David Brown Industries.

The popular fan-cooled Radicons are also widely used in the paper industry — specified by original equipment manufacturers. They have learned Radicon's ability to withstand extremes of temperature, dust, dirt and rain — with initial low cost, and low maintenance.

Immediate delivery on Radicons 3" to 14" all standard ratios from 5:1 to 60:1. Radicon complete drives supplied by all authorized David Brown factory branches and distributors.



DAVID BROWN, INC.

999 Beecher Street, San Leandro, California
6025 Atlantic Blvd., Maywood, California
1224 S.W. Morrison St., Portland, Oregon

PULP & PAPER

Strictly Personal

ALBERT H. ADAMS is manager of Pressafiner sales and CHARLES W. KYLE is sales engineer for Bauer Bros., Springfield, O. Mr. Kyle came from Santa Anna Container Co. . . . PAUL NEWTON, former asst. professor in paper technology at Western Michigan U., is in the coating dept. for S. D. Warren Co., Muskegon, Mich. . . .

F. K. HOWARD is new industrial engineer for Aetna Paper div. of Howard Paper Co., Dayton, O. He is no relation to the Howards who founded the firm, he says . . . ROBERT BRINGMAN, mgr. of pulp sales for Gilman Paper Co. was touring the Midwest. Bob used to be with Riegel and before that, St. Joe and Nekoosa-Edwards. . . .

The Pusey and Jones Corp., Wilmington, Del., has appointed E. N. PETERSON, sales engineer for the Middle West, it is announced by J. W. KOLYBABA, Paper Machinery Division Sales Manager. Mr. Peterson has been associated with the paper industry since 1930, including 15 years with Beloit Iron Works, four years with Bagley and Sewall, and recently with Black-Clawson. He will make his headquarters in Milwaukee. . . .

Appointment of WALTER VASTRICK as director of quality control for the Kalamazoo mills of Allied Paper Corp. is announced by JAMES H. MCCLURE, v.p. of mfg. Mr. Vastrick was formerly technical control superintendent of the Bryant mill. . . .

Appleton Machine Co. announces promotion of D. E. LAMON to chief engineer and H. K. ABRAMSON to sales office manager. Mr. Lamon succeeds H. L. WENDSHUH who has retired. Mr. Abramson was with Central States Engineering prior to joining Appleton in 1956. . . .

Charles K. Blandin Dies

Charles K. Blandin, 85, and almost to the last an active president and owner of Blandin Paper Co., died in Grand Rapids, Minn., Feb. 9. He was a former publisher of the St. Paul "Dispatch" and "Pioneer Press."

Mr. Blandin, who became publisher of the newspapers in 1915, negotiated purchase of the paper mill in 1916 to supply the dailies with newsprint. He sold the paper in 1927 for a reported $5,000,000. During the depression, Mr. Blandin invested millions to expand and modernize the mills, which later converted from production of newsprint to groundwood printing paper.



Collects "Hokum and Hypocrisy"

FRED CHAPPELL, who is in charge of special research and development projects at Hercules Powder Co.'s Paper Makers Chemical Dept. at Kalamazoo, Mich., owns an unusual collection of medical almanacs, patent medicine and bitters bottles. His hobby has taken him to the back rooms of many old drug stores and on digging expeditions to old dumping grounds. "The miracles of modern medicine pale to insignificance when one considers the cures claimed in patent medicine advertisements of the past century," he says. Mr. Chappell's collection was featured at the Kalamazoo Public Museum several years ago.

BUTTERWORTH
CALENDER
ROLLS
mean
business



- **because the finish on the paper can only be as good as the rolls in the calender**
- **because long-life in the calender stack means lower production cost**

For more than 60 years, Butterworth Dura-Smooth Rolls have been the standard of the industry – for an absolutely true, even surface, and long trouble-free operation.

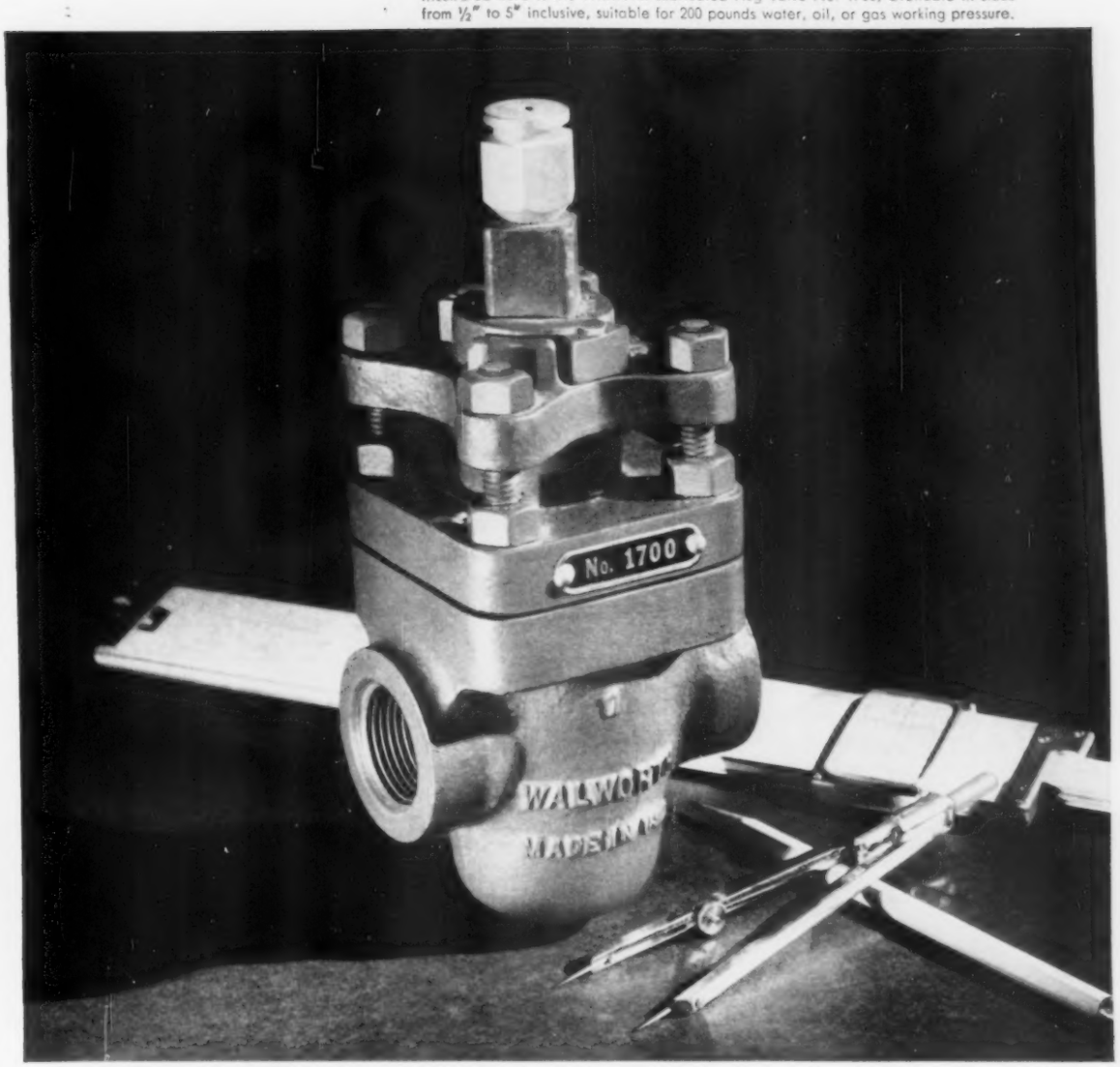
Butterworth Rolls are made to specification and tested for hardness, smoothness and density before delivery. You'll get many extra hours of service without requiring turning down or refilling.

Furnished new or refilled for every calendering need. And you get Butterworth Rolls at competitive prices. Quotations on request.

H. W. BUTTERWORTH & SONS COMPANY
Bethayres, Pa. Division of Van Norman Industries, Inc.

BUTTERWORTH
More than 60 years of Roll-Making Experience

Illustrated here is the Walworth Lubricated Plug Valve No. 1700, available in sizes from ½" to 5" inclusive, suitable for 200 pounds water, oil, or gas working pressure.



problem-solvers for tough jobs

*LPV's by WALWORTH

If you're familiar with the basic advantages of Plug Valves, you know why Walworth Lubricated Plug Valves work so well in really tough spots. You know about their direct port opening . . . their dead tight shut off. Seating and sealing surfaces are fully protected from attack by fluids being handled by insoluble lubricants.

*Lubricated Plug Valves

Remember, you can get Walworth LPV's in all sizes . . . from ½ to 30 inches . . . for pressures up to 5000 psi and for vacuum service . . . in a number of different styles and patterns. For more information about LPV's and for your copy of the new Walworth LPV Circular, see your local Walworth Distributor.

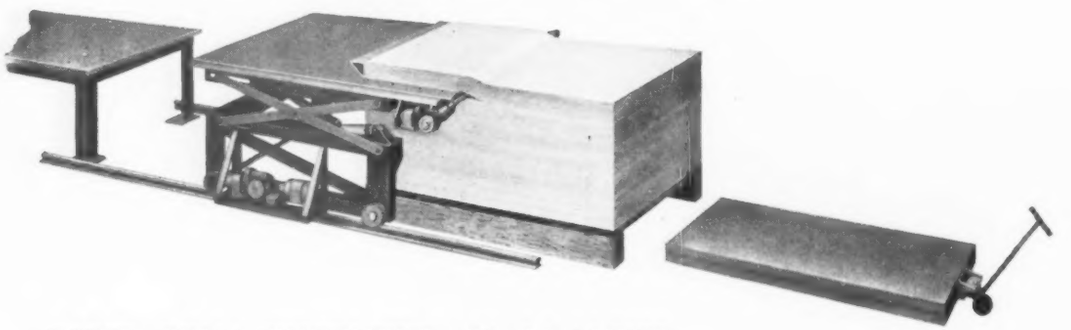
WALWORTH

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DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

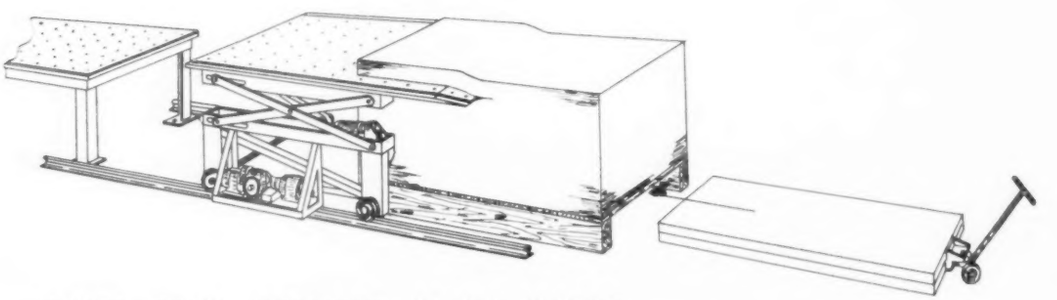
WALWORTH SUBSIDIARIES: ALLOY STEEL PRODUCTS CO. • CONOFLOW CORPORATION • GROVE VALVE AND REGULATOR CO. SOUTHWEST FABRICATING & WELDING CO., INC. • M&H VALVE & FITTINGS CO. • WALWORTH COMPANY OF CANADA, LTD.

IMPROVE YOUR PAPER TRIMMER OPERATION WITH AMERICAN'S STACKING AND UNSTACKING EQUIPMENT



PAPER REAM UNSTACKER—Model M-1191

Handles sheet sizes up to 60″ x 78″. Skid loads up to 72″ high. Requires no foundation or pit work. Easily moved if plant layout is changed. Unit shown with American Portable Hydraulic Scissors Lift. Lifts can be furnished to fit any type skid. One man operates complete unit.



PAPER REAM STACKER—Model M-1190

Handles sheet sizes up to 60″ x 78″. Skid loads up to 72″ high.

Model M-1187 Combination Stacker-Unstacker for uncoated papers and board is not shown. American also has a complete system for cartoning lines including package placement, carton sealing and stacking.

FOR ADDITIONAL INFORMATION! CALL—WIRE—WRITE

American **MANUFACTURING COMPANY INC.**

2119 PACIFIC AVENUE • TACOMA, WASHINGTON, U. S. A.

Southern

Memo from WFD

The Southern Exposure: Paper mill officials throughout the South are still talking about the deepfreeze on Dixie during late February. When temperatures dropped to nearly zero, most mills had to fight broken stock lines, bad ice conditions and other headaches. Bowaters famous big log pond was frozen over. It was the worst prolonged cold spell in the South in years. The cold spell lasted six days. By the third, many of Atlanta's leading stores were closed or open only part time. And by the end of the third day, 70,000 of Atlanta's 93,000 production workers were temporarily out of work due to the natural gas shortage.

E. P. (Bud) Wilson, Montana State College graduate and veteran Rayonier technician has been promoted to asst. supt. of the Fernandina mill. He is replaced as shift supt. by Joe Velardi, University of Illinois alumnus. . . . Robert M. Boehm, onetime director of research of Masonite Corp., has been upped to tech. director of the company. He headquarters at Laurel, Miss.

Success Story: Forest L. Camp, who started his career with the Mead Corp. in Chillocothe as a broke beater helper, then returned to college 10 years later to study industrial relations, is living proof that perseverance pays off. He recently was appointed industrial relations director of the Kingsport, Tenn., mill. . . .

Donald P. Camp, former head of

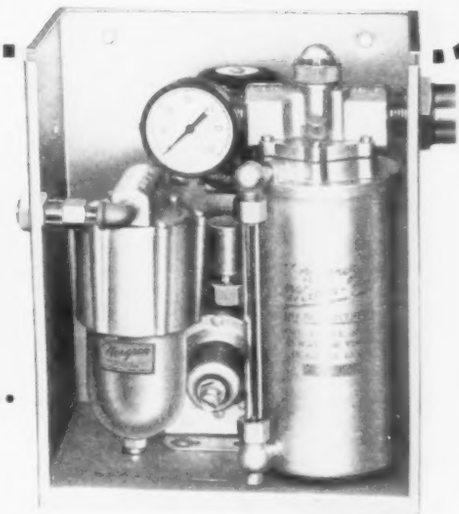


Honey ..... Tougas ..... Wakeman

Buckeye Cellulose Promotions

Paul K. Honey, vice president of The Buckeye Cellulose Corp., has been promoted to the newly-created position of manager of Buckeye's Cellulose & Specialties Division. G. A. Tougas succeeds Mr. Honey as manager of Florida operations, and O. L. Wakeman succeeds Mr. Tougas as manager of the Foley, Fla., mill. Mr. Honey will make his headquarters in Memphis, Tenn. He will now direct all Buckeye pulp operations, including research, manufacturing and sales, reporting to Walter L. Lingle, Jr., executive v.p. of the parent company, Procter & Gamble. Mr. Wakeman, who has been construction manager of the Foley expansion project, will be succeeded in that position by Charles Montague, who goes to Foley from Memphis.

Norgren MICRO-FOG LUBRICATION

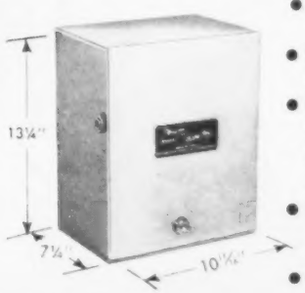


NEW for paper machines...

Compact, Tamper-Proof Cabinet Units

lubricate all bearings, gears, chains and cams on a machine

These new Norgren units provide ideal lubrication by applying just the right amount of air-borne oil fog to all bearing surfaces. The standard unit includes an automatic-drain air line filter, a solenoid valve, a pressure regulator, a pressure switch and a MICRO-FOG Lubricator... *and provides the following important advantages:*



1 QT. OR 2 QT. OIL CAPACITY

200 OR 300 BEARING INCH RATING

- **TAMPER-PROOF**—Totally enclosed key-locked cabinet prevents tampering.
- **SPLASH-PROOF**—Coolant and corrosive liquids cannot reach interior of enclosure.
- **CONVENIENT TO SERVICE**—Removable one-piece top and side panel—secured by key lock—provides easy access for authorized personnel. Visual oil feed is proof of lubrication. Oil level gauge glass provided on lubricator.
- **SAFEGUARDS MACHINE COMPONENTS**—Pressure switch actuates alarm or shuts down machine if air pressure fails.
- **HEATER AND OIL LEVEL CONTROL OPTIONAL**—Thermostatically-controlled Heater, for 1 Qt. units, maintains lubricant temperature and viscosity. Oil level control actuates alarm or stops machine when oil needs replenishing.

For complete information, call your nearby Norgren Representative listed in your telephone directory—or WRITE FACTORY FOR NEW No. 900 CATALOG

C. A. NORGREN CO.

If it's Norgren... It's Dependable.

3458 SOUTH ELATI STREET ENGLEWOOD, COLORADO

Strictly Personal

chemical sales at Dow's Houston office, is mgr. of its new Dallas office. . . . WARREN K. GUY has taken over as dist. mgr. of the new Link-Belt office in New Orleans, 40th in the firm's coast-to-coast office network. . . . VICTOR L. BALTZELL, for 15 years field rep. for Oakite Products, Inc., out of Dallas, is now mgr. of its new Louisville, Ky., branch. . . .

DANIEL S. COHEN, v.p. of Carolina Paper Mills, Inc., since 1948, has been elected president. . . . JAMES B. YOUNG has been promoted to sales mgr. of the Atlanta area for Mead-Atlanta Paper Co. . . . GERALD A. O'BRIEN, formerly with Anglo Paper Products, Ltd. of Canada, has joined the engineering staff of Riegel Paper's Carolina Div. at Acme, N.C. He will be mech. engineer for the bleached board mill now under construction. . . .

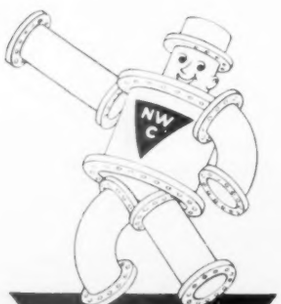
Scott Paper has made major changes at H&W Div. in Mobile. ALFRED J. KARPINSKI, dir. of staff engineering and development, Chester, Pa., moves up to asst. gen. mgr. of prod. at Mobile and JAMES H. COIL, JR., onetime asst. secty. at Mobile, has been promoted to asst. gen. mgr. of services. EDWARD SHERIDAN, former asst. supt. is now paper supt. and JOHN SHALER becomes asst. supt. CLINTON ADAMS, JR., onetime supt. of utilities, is now chief engineer, while LEO B. NEWBERRY, shift engineer has been upped to asst. mgr. of utilities, filling vacancy left when ANDREW A. HERNDON was promoted to mgr. RALPH G. YOUNG, former asst. plant mgr. at Mobile, is special asst. to the dir. of staff engineering and development in Chester, Pa. . . .

Headline of the Month: One of the industry's company magazines recently featured two side-by-side headlines which were worth a few grins—"Kiddie Party is Whopping Success" . . . "Seven Employes Retire." Must have been some party!

DR. WILLIAM H. WISEMAN, who holds degrees from Ohio State and the Institute of Paper Chemistry, and recently completed work on his ph.d., has become asst. tech. director at West Virginia's Covington mill. He was formerly with Mead Corp. and Potlatch Forests, Inc. WILLIAM H. WARREN, 33-year-old personnel mgr. for Halifax Paper Co., was named the outstanding young man of Roanoke, N.C., by its Junior Chamber of Commerce. He is credited with reorganizing and improving the mill's personnel dept. and is cited for many community activities. . . .

Hard travelling salesman will understand the plight of the peripatetic peddler who returned home from a trip only to have his house hit by a tornado. He and the little woman both found themselves blown through a hole in the roof, and then placed gently on the front lawn. He

CUSTOM FABRICATIONS



NORTHWEST COPPER WORKS

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PORTLAND 12, OREGON

PHONE
AT 4-2191



Willetts ..... Hoffman

New Posts in South

Walter D. Willetts is now sales engineer for Albany Felt for Fla., Ga., S.C. and part of Ala. A grad of N.Y. State College of Forestry, he joined Albany in 1949, will headquarter in Jacksonville, Fla.

Charles E. Hoffman, of Atlanta, has been appointed sales service manager of Stowe-Woodward plant at Griffin, Ga. He is a graduate of Georgia Tech, with b.s. in industrial management, and Woodrow Wilson College of Law with an LL.b. degree.



ALBACEL & ASTRACEL

CHLORINE DIOXIDE BLEACHED SOFTWOOD SULPHATE

CHLORINE DIOXIDE BLEACHED HARDWOOD SULPHATE

Balanced Paper-Grade Pulps Created by Papermakers for Papermakers

Throughout the free world, papermakers use and like Riegel's Albacel and Astracel. . . paper-grade pulps that provide the right balance of all important qualities . . . brightness, cleanliness, strength, formability and proper beating characteristics.

RIEGEL PAPER CORPORATION

260 MADISON AVENUE, NEW YORK 16, N. Y.

Strictly Personal

turned to his wife and consoled her: "Don't cry, honey, we're both okay." Wife answered: "I'm weeping from joy—this is the first time we've been out together in ten years. . . ."

Cliff Crawford Dies

Cliff R. Crawford, vice chairman of The Black-Clawson Co., died Jan. 31 at Hartsville, S. C. He was a veteran with the Black-Clawson companies, basing in Hamilton, O., for many years. He was president of the company until last year, through a period of its greatest growth.

Pacific Coast

Memo from LHB

STETHEN THURLOW has moved his factory engineering and sales representative firm into new offices at 1731 First Ave. So., Seattle 4. Phone: Mutual 5488. Mr. Thurlow's company represents Moore & White Co., papermaking machinery; Poirier controls; Vapo Systems; Ajax flexible couplings, and Standard perforated screens. . . .

N. W. COSTER, mgr. of Scott Paper's Everett mill, has also been named a director of Coos Bay Pulp, and HOWARD WENNER, of Chester, Pa., becomes controller of that subsidiary. . . . H. L. DAY, office mgr. CZ Port Angeles mill, retires after 39 years service. . . . DALE T. MORDEN, elder son of pres. R. BURKE MORDEN, Morden Machines Co., received Boy Scouts' "God and Country Award". . . . JOE BLASCHKA is promoted from development tech. engr. to assistant tech. supervisor at CZ Camas. . . .

SID S. MOORE, for past five years associated with engineering and sales of equipment for West Coast mills, is establishing his own sales organization—General Engineering Sales Co., P. O. Box W21, Portland 1, Ore. He obtained an engineering degree at Iowa State.

SCOTT WITT, for the past year handling Weyerhaeuser Timber Co. job analysis program at Longview, promoted to director of personnel and transferred to WTCo's Tacoma offices. . . . ARTHUR W. PALMER, former groundwood mill supt. at CZ West Linn who retired Feb. 1, joins Sandwell & Co. as a consultant and will go to East Pakistan next summer to assist in construction of new mill. . . . JOHN D.



Gouker Supt. at Sitka

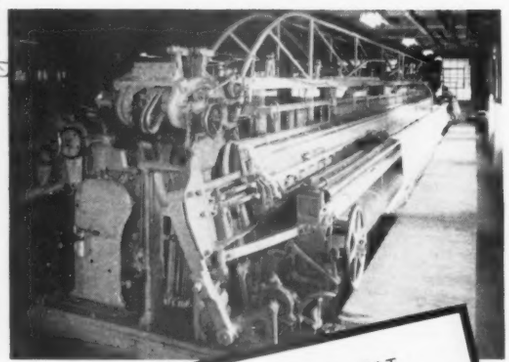
George L. Gouker has been named gen. supt. of Alaska Lumber & Pulp Co., now building a mill at Sitka. With Rayonier since 1937, he was asst. supt. of Fernandina immediately prior to joining AL&P Co. The Sitka mill is being built by Japanese and American interests.

LELAND, JR., son of J. D. LELAND, vice pres. International Paper, Longview, Wash., is engaged to JOAN PEARSON, Pendleton, Ore., who reigned as queen of famed Pendleton Round-Up in 1954. . . .

Alsaka Lumber & Pulp Co. expands staff for its Sitka plant now under construction: GEORGE L. GOUKER, from Rayonier's Fernandina div., joins AL&P as gen. supt.; JOSEPH C. BORN, formerly maintenance supt. at Rayonier's Jesup, Ga., operation, becomes maintenance supt. at Sitka; JOHN F. RESCH becomes

HAM FELTZ explains: **"Why a 100 Year Old Company Buys The Biggest Loom in America."**





YOU CAN'T BEAT Hamilton FELTS

"MANY A 100 year old company
may like to sit on its laurels
and keep producing as it did in the past

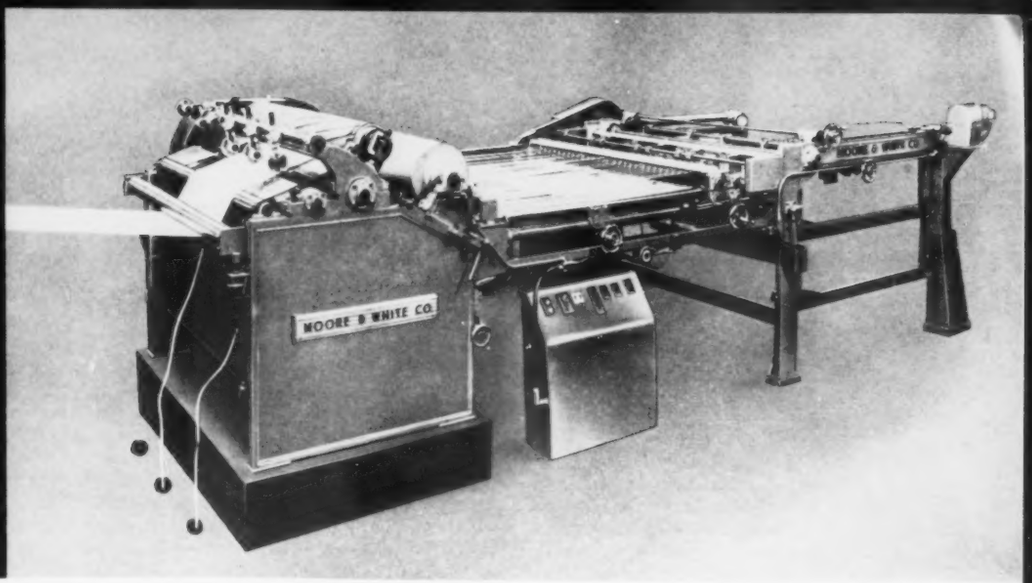
But NOT the makers of Hamilton Felts !

"They've just installed this new giant loom
with a reed space of 726 inches
—the widest felt loom, we believe, in America.
Now Hamilton Felts can be produced
to meet the needs of all board and paper mills
which may require felts not only of
unusual qualities* but unusual measurements.
It's no wonder that, after 5 generations
you can't beat Hamilton Felts."

**"If you have a problem in paper or board making that one of our 300 proven styles won't solve, we will be happy to design a felt that will. Why not talk it over with your Hamilton Felt Service Salesman—or write us direct—today?"*

SHULER & BENNINGHOFEN, HAMILTON, OHIO

NEW MOORE AND WHITE R-100 CUTTER-LAYBOY UNIT EXCEEDS PROJECTED PRODUCTION



Accurate production records obtained from the initial installation of the new M & W, R-100, simplex cutter-layboy unit, at the G. B. Goldman Company, Philadelphia, Pa., reflect sustained production in excess of anticipated tonnage. The R-100, a completely integrated cutter-layboy unit is designed for high speed sheeting of paper in finishing room and converting applications. Moore and White's progressive research program and years of experience are combined in the R-100, resulting in a rugged unit capable of sustained high speed operation. The R-100 delivers neat uniform piles of sheets within the prescribed tolerance limits for size and squareness and eliminates the need for guillotine trimming. On actual production runs of the R-100, equipped with an overlapping tape delivery system, speeds in excess of 800 feet per minute have been maintained.

Machine owners will appreciate the many new innovations of the R-100 that result in a rugged long lasting machine with a minimum of down time and maintenance cost. Machine operators will appreciate the ease of set up, the convenience of strategically located auxiliary controls and the unobstructed delivery end for easy handling of skids.

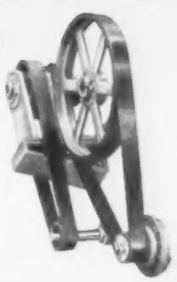
The R-100 is available to handle roll widths from 50" to 90" and can be adjusted to a full range of sheet lengths from 18" to 72". Moore and White also makes a complete line of cutters for paper, paperboard and pulp in size ranges from 50" to 210".

THESE FEATURES CONTRIBUTE TO THE R-100'S OUTSTANDING PERFORMANCE

1. Unique Jogging System activated by cam action located on one side of layboy frame permits variable speed and stroke control of paddles and eliminates foreign matter droppings in pile.



2. Timing Belt Drive eliminates the use of all gears. A LIMITORQUE COUPLING set to slip on overload prevents damage to drive in case of "ball-up".





3. The Prime Mover U.S. VARIDRIVE AC motor eliminates need for power conversion. SPACE SAVER design locates the main drive within the machine frame.

4. Unobstructed delivery end of layboy permits easy handling of skids. Positive adjustment controls located for operator's convenience.
5. Positive adjustment controls permit accurate settings for sheet length and squareness in a matter of seconds.
6. PIV unit gives close tolerance settings for sheet length. Special clutch on main drive allows PIV to run for adjusting purposes without the machine feeding paper to the cutter.
7. Electric brake on main drive provides for fast safe stop of machine.
8. Control console with push button controls gives complete control from one point. Auxiliary controls strategically located at points convenient to operator.
9. Separate gearhead motor with enclosed brake for raising and lowering delivery platform that has four point support.
10. Rugged construction and anti-friction bearings on all rotating parts give vibration-free operation and long machine life.

THE MOORE & WHITE COMPANY

Custom-Built Machines for Makers of Paper and Paperboard

330 East Hunting Park Avenue, Philadelphia 24, Pa. GArfield 6-9439

West Coast: Stephen Thurlow Co., 1731 First Avenue, South, Seattle 4, Wash.

M & W

WANT PROOF?

Write, wire or phone for complete specifications and production data. A free, no obligation test run of your own rolls can be arranged so that you can have actual results on your own stock.

Strictly Personal

instrument supervisor; LLOYD M. RICE joins the firm as personnel supervisor. . . .

Realignments in staff of CZ's Western-Waxide div. as result of expanding laboratory at San Leandro: C. S. FUNK, assistant to Dr. JOHN S. BARTON, director of packaging research & development; HOWARD ADLER promoted to supervisor production services. . . . H. L. (HY) RAMMER, manager of quality services in the manufacturing services department, recently celebrated his 35th anniversary with Fibreboard Paper Products. Hy started at the Stockton, Calif., plant shortly after receiving his degree in chemical engineering from the Pulp and Paper School at the University of Maine.

GERALD S. GILLIGAN, senior economist in Portland office of Stanford Research Institute who served as project leader on the Weyerhaeuser SRI report "America's Demand For Wood, 1929-1975," joins St. Regis Paper Co. as market analyst and economist . . . HOWARD E. GARLAND, packaging engineer specializing in industrial packaging for Container Corp. of America, becomes asst. sales mgr. of the firm's Portland plant . . . H. G. TAGGART, northwest sales mgr. of Pioneer div. of Flintkote Co., transfers to Los Angeles as gen. mgr. of building material sales; F. C. SCHULTZ, former Seattle district sales mgr. succeeds him in Portland; other Flintkote changes: D. W. DELANO, former Portland district sales mgr., takes a similar post in San Francisco; J. A. HOYT, former Northwest insulation sales representative, becomes Portland district mgr. . . .

Industry men on the Coast seem to be rapidly taking to the air. BEN NATWICK, Appleton Wire Works, recently made his first solo flight; HUGH OSBORN, Lockport Felt Co., and DON TORANGEAU, of W. A. Salmonson Co., have nearly completed training requirements and expect to solo shortly. . . . DON FULLER, paper mill supt., and SCOTT SMITH, pulp mill supt., both of Fibreboard San Joaquin Div., jointly purchased a 2-seater plane for their personal flying. . . .

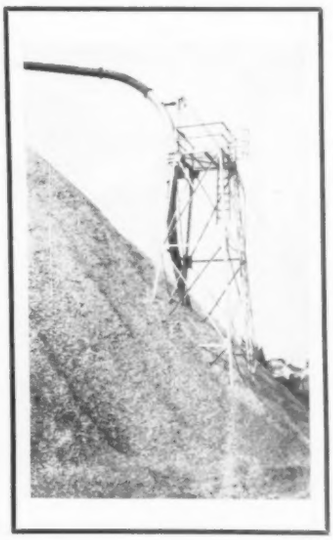


Howe Is New K-C Supt.

Thomas B. Howe has been with K-C for 19 years, rising to mgr. of central planning dept. at Neenah, Wis. As supt. of the Fullerton, Calif., mill, he succeeds James Murphy, who accepted the general managership of Pacific Press, Los Angeles.



MOVE 2 TONS OF CHIPS A MINUTE



A Rader high pressure pneumatic conveying system at the new Georgia Pacific Paper Company mill at Toledo, Oregon conveys more than 2 tons of pulp chips per minute from a rail car unloading pit 550 feet to an outside storage pile. Pipe can be laid out over the 100 foot high pile, allowing the Rader system to spread chips over the entire storage area. This area supplies raw material for the largest paper machine on the West Coast.

Rader systems, which handle more wood chips than any other type of pneumatic conveyor in the world, perform many difficult conveying jobs in pulp mills: build open storage piles with segregated species, reclaim from open storage, blow to several discharge points through use of diversion valves, increase digester yield by compacting more chips in each charge.

Rader solves virtually any bulk material handling problem. Write today for complete information.

RADER PNEUMATICS, INC.

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Vancouver, B.C. 4645 Main St. | Preston, Ont. Canada | Eureka, Cal. Box 61 | Boston, Mass. No. 10 High St. Rm 716 | Memphis, Tenn. Box 3722 Municipal Airport



Strayer ..... Lynch

Promoted at St. Regis Tacoma

S. P. (Ted) Strayer, assistant chief chemist—pulp mill, becomes assistant to gen. mill supt., Robert Lynch, assistant chief chemist—paper mill, to assistant chief chemist—pulp & paper mill, at Tacoma, Wash.

Story of progress...

Dominion Engineering's part in developing Pressure Headboxes



The pressure head box is an essential component of all high-speed paper machines. The photo above shows the 1956 version of the original patented design pressure head box, as developed by Dominion in 1936.

Dominion continues to produce advanced designs in anticipation of the pulp and paper industry's demand for faster and more efficient machines.

DOMINION ENGINEERING
COMPANY LIMITED, MONTREAL

HAROLD L. ZELLERBACH, acting chairman of CZ board, completes 40 years service with the organization. . . . EMERY DAVIS, manager of ZPCo Oakland division, transfers to Fresno as manager of that division preparatory to succeeding ALVIN R. KUHN who will retire next June.

Long term service awards to key men at CZ Olympic Penninsula mills—EDWARD F. DRAKE, assistant plant engineer at Port Townsend, 30 years. FINLEY CECIL BROWN, woodmill chip and yard supt., 25 years. . . . MARGARET KRUMMEL, switchboard operator who has long been greeting visitors arriving at CZ West Linn plant, retires. . . . HARRY LINCOLN is director of traffic research for Fibreboard Paper Products Corp. V. H. TALCOTT is new mgr. of the firm's Real Property Dept. . . . JOHN V. MANNERS, 60, founder and president of Paperbox Corp., Oakland, box manufacturing concern, died after a long illness. . . . Dr D. W. GOHEEN, Dr. W. L. SCHILLINGS and R. J. HERSCHLER, all senior research chemists at CZ Camas, has been transferred from central research dept. to chemical products div. . . . Dr. TETSUO NOZOE, faculty of science, Chemical Institute, Tohoku University, Sendai, Japan, delivered a lecture to personnel of CZ Camas central research dept. and chemical products div. on "recent developments in azulene chemistry". . . .

CORDON CURZON, co-editor of Puget Sound Pulp & Timber Co.'s PUGET PARADE, and Miss CLARA JEAN ROWLES were married Nov. 23rd. . . . DON SHIRLEY, Northwest sales manager of Link-Belt, Seattle, reportedly won "a little money—but not much" shooting golf with friends at L-B's Indianapolis chain plant which he visited subsequent to the Engineering Conference in Cincinnati. . . .

Changes in Ederer Engineering Co., Seattle: A. F. EDERER becomes chairman of the board and AXEL A. TALLQUIST succeeds him as pres.; JOHN C. EDERER becomes vice pres.-gen. mgr. Executive commitee consists of chairman JOHN EDERER, C. W. LUSSIER, adv. and public relations director, B. A. PEARSON, chief engr., A. J. LUBERTS, chief elect. engr., RALPH N. TALLQUIST, plant mgr., ARNT PAULSON, gen. supt. . . .

Pulpwood Personals

JACK D. TURNER, area forester in Franklin, Bedford and adjacent counties for West Virginia Pulp and Paper Co., Covington, Va., has been promoted to the wood procurement staff of the company's Luke, Maryland, mill, operating out of Winchester, Va. He joined Westvaco in 1952 as a forester with the Charleston, S.C., mill. He is succeeded as area forester by DON F. GROSS.

Crown Zellerbach re-aligned personnel to provide maximum flexibility in supplying wood for CZ mills, according to C. W. RICHEN, Northwest timber dept. mgr.—K. C. OSIER, mgr. of Puget Sound wood supply, moves from Seattle to Port Angeles to manage the new 27,000-acre Olympic Tree Farm and be in charge of log sales and acquisition for mills in that area; HAROLD M. HANSON, chip buyer, transfers from Seattle to Port Townsend; C. P. MORRIS, formerly in charge of Port Angeles wood procurement, moves to Portland, Ore., as log buyer under OWEN W. BENTLY, mgr. of Columbia River wood supply. . . . .

HARDIN R. GLASCOCK, forester of Eugene, Ore. district of Industrial Forestry Assn. since 1951, becomes forest counsel of Western Forestry & Conservation Assn., Portland, Apr. 1 succeeding STUART MOIR, who resigned. . . .

ROBERT WILMS has been appointed dist. rep. for Pioneer Saws div. of Outboard Marine Corp. and will be responsible for sales and service in Mich., Ind., Penn., and Ohio. He and his wife and family will live at 10930 Portage Rd, Kalamazoo, Mich. . . . JOHN HEMMINGSEN, formerly logging manager for MacMillan & Bloedel's western division, headquartered at Port Alberni, has been named logging manager for the entire organization. His father, MATT HEMMINGSEN, was an early-day logger on Vancouver Island. . . .

All CZ tree farms in Oregon-Washington were open to hunters and fishermen last year. More than 13,000 sportsmen found good hunting there, the big-game bag including 1,609 deer, 455 elk, 162 bear, 27 coyotes and 11 bobcats. Chief forester GEORGE H. SCHROEDER reported only two hunter-caused fires with less than one acre burned. . . .

RALPH A. DAVIS, JR., onetime conservation forester with Champion Paper and Fibre Co. at Huntsville, Tex., and a former area conservation forester for the SPCA, has set up a pulpwood dealership to serve Southland Paper Mills in Texas. . . . JAMES W. WILLIAMS, JR., has been appointed minerals manager for the woodlands dept. of International Paper's Southern Kraft Div. He succeeds L. L. SWAFFORD, 40-year veteran of IP who retired. . . . FREDERICK M. SMITH, U. of Michigan graduate, has joined the Crossett Co. Forestry Division as waste wood utilization engineer.

FRANK A. KELLY has retired as vice pres. and mgr. of lands and timber for The Northwest Paper Co., Cloquet, Minn., after 29 years with the firm. . . . He is succeeded by WILLIAM M. MACCONNACHIE. . . .

KEN TROWBRIDGE, who heads woodland activities for North Carolina Pulp Co., is justly proud of his son, Ken, JR., North Carolina State halfback who scored a td against Maryland, among other steller performances during the current grid season . . . W. J. BAILEY, v.p. in charge of woodlands and traffic for West Virginia Pulp and Paper Co. retired recently. JOHN ALBERT will handle traffic operations and D. Y. LENHART will be in charge of timberlands and real estate . . . C. J. BLADES, chief forester for Duke Power Co., Charlotte, N.C., has been elected president of the North Carolina Forestry Assoc. . . . C. B. P. MULLIN, former supervisor of the Jefferson National Forest at Roanoke, Va., has been named chief of the division of station management at the Southeastern Forest Experiment Station . . . JEFF HUGHES, onetime area forester for the Gaylord Container Corp. div. of C-Z at Bogalusa, La., has been picked to head the company's forestry operations in Southwest Louisiana. Unit has been established in connection with the company's plans to build a paper mill near DeRidder . . .



Berklund ..... Moran

In New Nepco Woods Posts

BRUNO L. BERKLUND has been appointed to a newly-created post of forest management forester in the woodlands dept. of Nekoosa-Edwards Paper Co., responsible for establishment and operation of 205,000 acres of woodlands in Wisconsin and upper Michigan. He is a graduate of Univ. of Minnesota. JOHN MORAN was named resident forester for the newly-established Northwestern district, headquarters in Ashland, Wis. He is a graduate of Univ. of Michigan.

Elected President of APA



GEORGE B. AMIDON, director of woodlands for Minnesota & Ontario Paper Co., was elected president of American Pulpwood Assn., succeeding L. A. Whittle of Brunswick Pulp and Paper Co., Brunswick, Ga., who was president of the association in 1956 and 1957. Mr. Amidon is a graduate of U. of Minnesota school of forestry and joined Mando in 1944. Mr. Whittle continues as a director of APA.

Canada

Memo from CLS

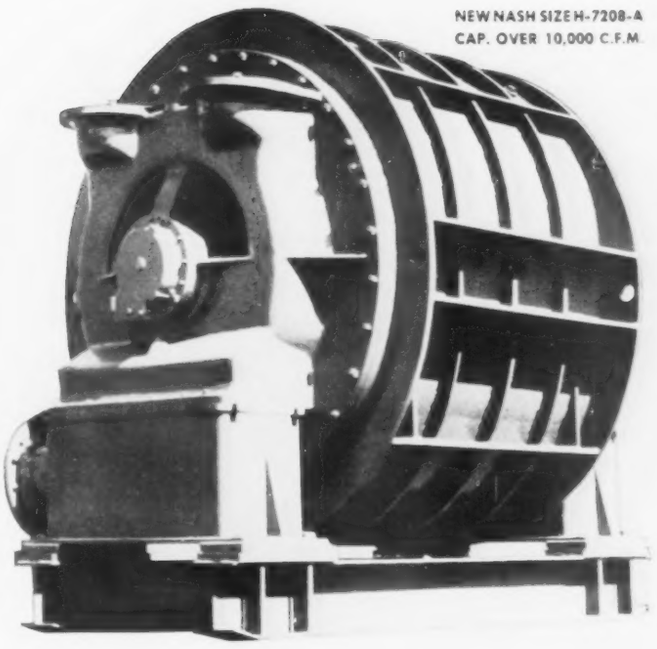
ROBERT G. SHIRRIFF is mill manager for Kimberly-Clark Pulp & Paper Co. Ltd., Terrace Bay, Ont. (formerly Long Lac Pulp and Paper Co. Ltd.). . . . JOSEPH C. WIG, former manager at Terrace Bay and previously plant engineer there, is the new mill manager at Irving Pulp & Paper Co., Lancaster, N.B., which recently was acquired by Kimberly-Clark.

J. GILBERT (GIL) D'AOUST, one of British Columbia's best known mill engineers, died recently at Powell River, B.C., after a long illness. He was 52. An engineering graduate of the University of B.C., Mr. D'Aoust was plant engineer with Powell River Co., and worked for Consolidated Paper Co., Price Bros. & Co., and Sorg Pulp Co. . . .

DWIGHT L. STOCKER, chairman of board of The KVP Co. Ltd., announces MR. B. F. AVERY is now vice chairman of the board and will concern himself primarily with matters of company policy. E. NORVAL HUNTER is named president of the company. This responsibility will be in addition to his present ones as first vice president of The KVP Co. at Kalamazoo, Mich. and president of Appleford Paper Products Ltd., both associated companies. D. P. BEST becomes vice president and resident mgr. of The KVP Co. mill at Espanola, Ont. JOHN C. SCARTH, sales manager, is named a vice president. . . . GRANT WOOD, formerly with Columbia Cellulose Co., Ltd., is now with Consolidated Paper Sales Ltd. —kraft paper and woodpulp division in Montreal, Que. . . . IAN B. CHENOWETH has been appointed statistician of the Canadian Pulp and Paper Assn, according to announcement by R. M. FOWLER, president. . . .

T. N. BEAUPRE, executive vice pres., Columbia Cellulose Co., was recently elected chairman of the executive committee, British Columbia division, CPPA, in Vancouver, B.C. L. L. G. BENTLEY, vice president, Canadian Forest Products, was elected vice chairman.

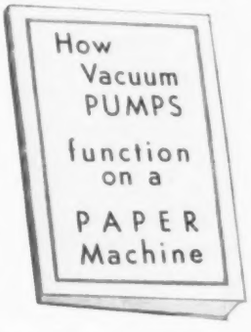
Members of the new executive committee are: W. E. BREITENBACH, executive vice pres. Alaska Pine & Cellulose; IAN BARCLAY, assistant to the executive vice pres. Columbia Cellulose Co.; J. A. CRAIG, pres. and managing director, Sidney Roofing & Paper Co.; E. M. HERB, president, Westminster Paper Co.; M. J. FOLEY, president, Powell River Co.; J. S. JOHANNSON, gen. mgr. association relations, MacMillan & Bloedel; C. D. DICKEY, JR., president, B. C. Forest Products; R. J. SCHADT, vice president in charge of manufacture, Elk Falls Co. and R. H. R. YOUNG, exec. vice pres., Crown Zellerbach Canada. LEANDER MANLEY is sec.-mgr. . . .



If three days lost production on a paper machine amounts to more than the cost of Vacuum Pumps, dependability is the prime factor in pump selection.

Over a thousand leading mills depend on Nash Vacuum Pumps to insure continuous production. Nash Pumps are built sturdy enough to stand the pounding of continuous production. They are simple. They have no internal parts in wearing contact. They will handle slugs of water or stock. They are designed to operate at the low speeds necessary for long life and reliability. Don't gamble with your production. Install Nash Vacuum Pumps and be safe.

NASH ENGINEERING COMPANY
SOUTH NORWALK, CONN. U.S.A.



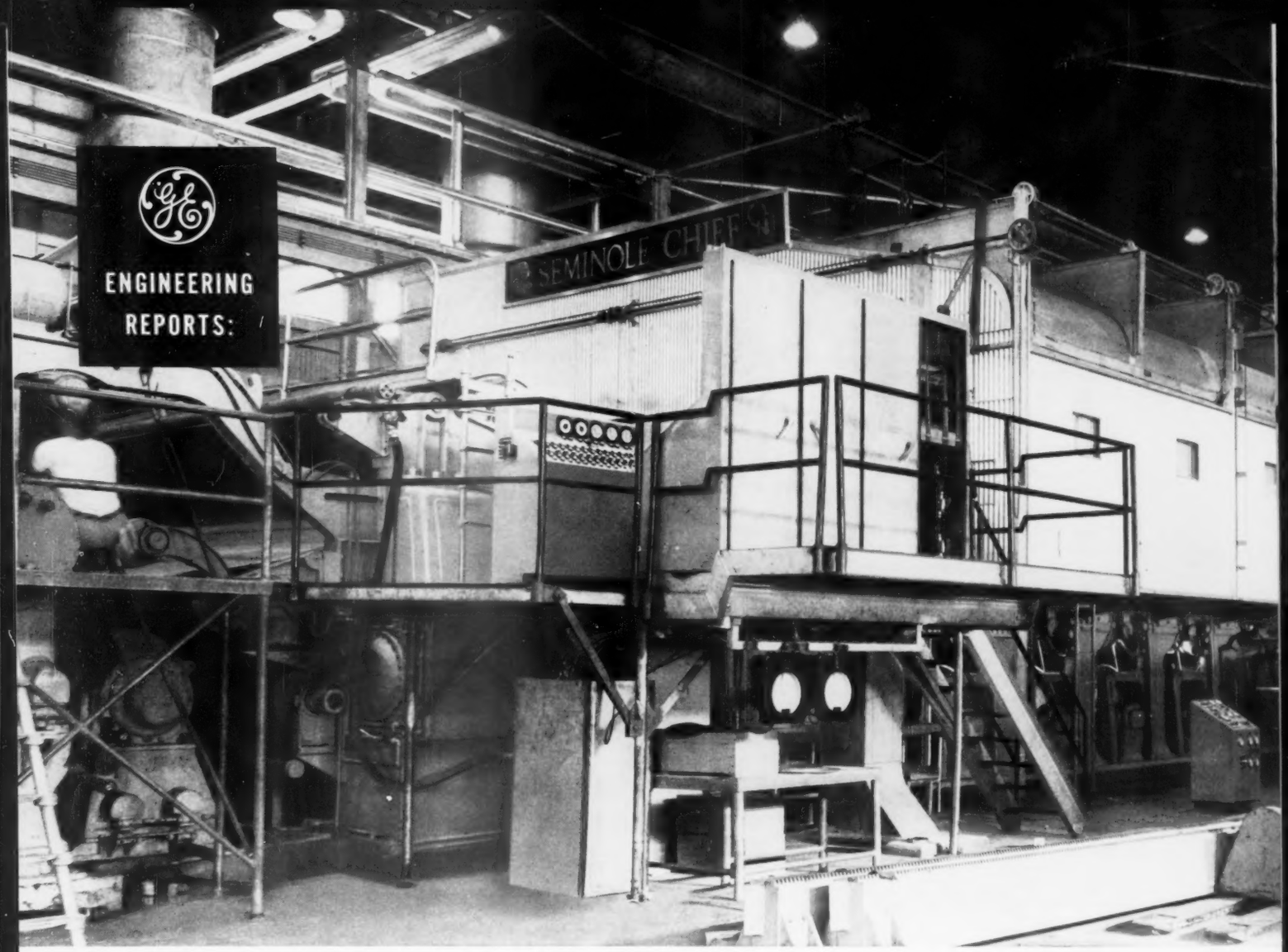
Of equal interest to Management and to Machine Operators is this informative booklet just published. A copy will be mailed to you free upon request.

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ENGINEERING REPORTS:

GENERAL ELECTRIC HELPER DRIVE SYSTEM POWERS . . .

World's Biggest Kraft Board



PLANNING ELECTRICAL EQUIPMENT requirements for mill expansion are (L-R): G.E. Shaad and J. B. Peebles, Jr., both General Electric Co.; and L. C. Crowder, Chief Engr., O. A. Smith, Staff Engr., and J. A. McDermott, Gen. Mgr. of Pulp and Paper Production, all from St. Regis Paper Co.

New "Seminole Chief" adds 1000 ton-per-day capacity to St. Regis' Jacksonville, Fla., mill.

The huge new paper machine with a rated capacity of 1000 tons per day is now operating at the St. Regis Paper Company's Jacksonville, Florida, mill. Part of an expansion begun two years ago, the newest and largest kraft board machine in the world manufactures paperboard used primarily to make corrugated containers. Known as the "Seminole Chief," the new Fourdrinier machine built by Beloit Iron Works is designed for speeds up to 2500 feet per minute.

ELECTRICAL EQUIPMENT furnished by General Electric for the mill expansion includes the electrical helper drive and the world's largest regenerative tension winder drive for the machine rewinder. Featuring static regulators self-contained in the control line-up, the helper drive supplies a total of 990 horsepower distributed over 12 motors applied to wet and dry end sections. Accurate control of machine operation is achieved by regulation of current, voltage or speed, based on individual section requirements. The factory-wired static regulators allow a savings in installation time and space, as well as a reduction in rotating equipment maintenance.

THE WINDER DRIVE can accelerate or decelerate in approximately ½ minute, can stop in emergencies in 15 seconds. A 500-hp direct-



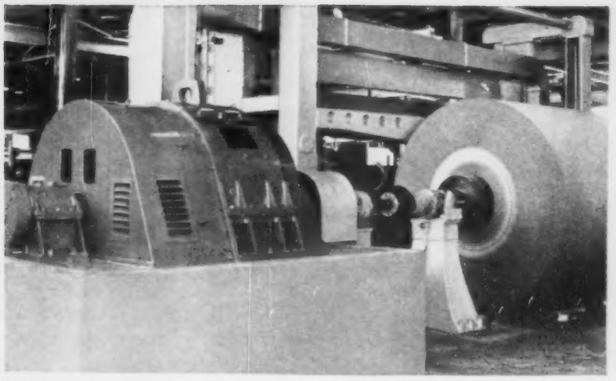
Machine

coupled braking generator operates over a mill roll build-down range of 4:1, controls sheet tension to a pre-set value from 2½ to 11½ pounds per inch of width. Two 400-hp motors power windup stand at speeds up to 6500 feet per minute. Operator's console permits complete control of rewinding operation, requires minimum of operator attention.

CO-ORDINATION of equipment into a flexible, easy-to-maintain electrical system—designed to meet the special needs of this mill—was the result of close cooperation between St. Regis and General Electric engineers. Whatever your drive requirements, G-E engineering services are ready to help design, equip, and install a co-ordinated electrical system from one-line diagram to on-time startup. Simply contact your nearest General Electric Apparatus Sales Office for more information on paper mill drive systems. Or write for bulletin GEA-6508, Drive Systems for Pulp and Paper Mills, General Electric Company, Section 655-21A, Schenectady 5, New York.

Engineered Electrical Systems for the Paper Industry

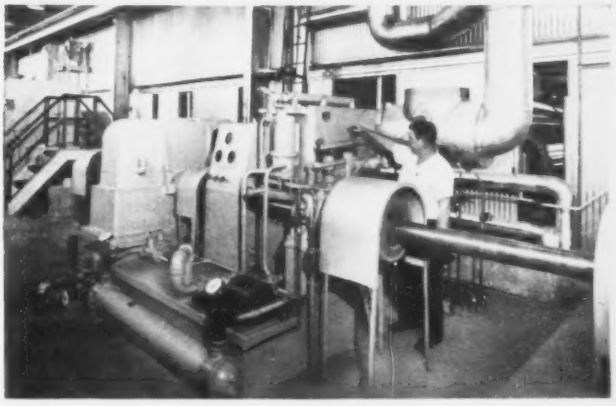
GENERAL ELECTRIC



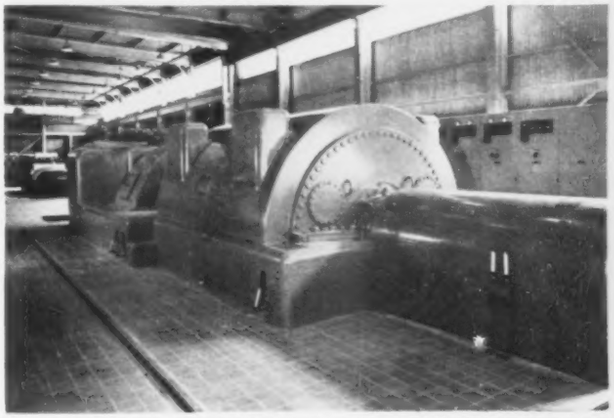
WORLD'S LARGEST regenerative tension winder drive has 500-hp direct-coupled braking generator, two 400-hp windup motors to power winder up to 6500 feet per minute.



MAIN M-G SET for winder drive is rated 400 KW. Installation was simplified by use of high capacity busway to interconnect elements of winder drive.



MECHANICAL-DRIVE TURBINE is rated 3600 hp. and provides speed regulation of .1% for mechanical line shaft drive.



30,000 KW TURBINE-GENERATOR increases mill's total generating capacity to 53,000 KVA, is tied to present distribution system permitting shift in steam or load between existing and new equipment.

Meet Huyck's
BEAUMONT

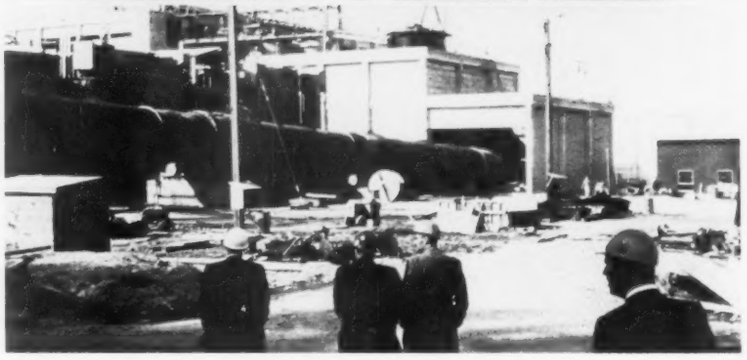


Ralph H. Beaumont is Huyck's Director of Chemical Research. In addition to his work on the detection of chemical damage in paper machine felts, he is responsible for Huyck's 4-D Treatment and many other advances in the chemistry of papermakers' felts. With a Doctorate in Physical Chemistry from Rutgers University, Ralph heads-up a complete laboratory staff geared directly to the needs of the paper industry.

HUYCK FELTS

First in Quality . . First in Service Since 1870

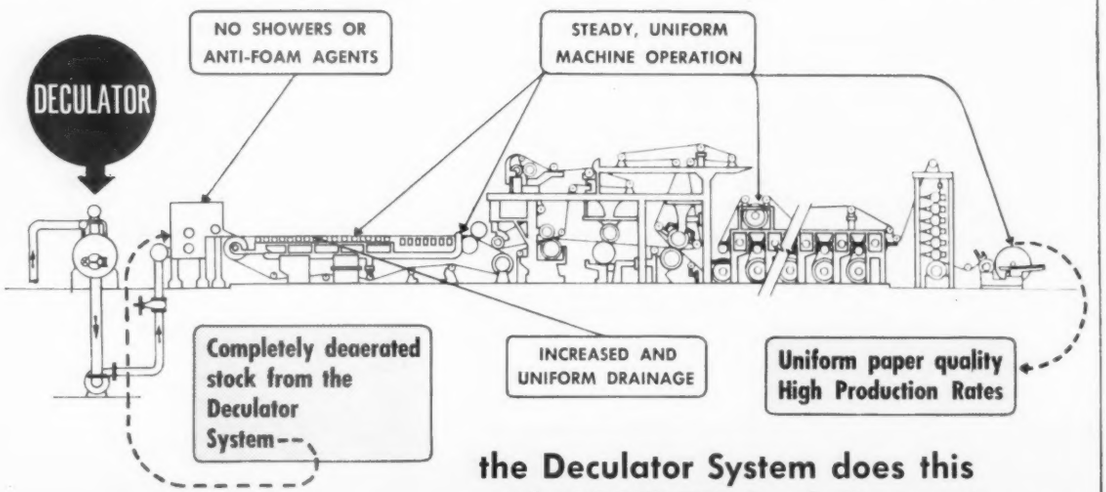




Checking Over New Market Pulp Producer

With new Crofton, B. C., kraft pulp mill behind them in top picture, left to right: WALTER HOLLAND, vice president, pulp, B. C. Forest Products Ltd.; DAVID BRITTAIN, executive vice president, Mead Pulp Sales Co., sales agents for the pulp, and MORT RICHMOND, sales mgr. and executive asst. to president, B. C. Forest Products. ROBERT CALLAHAN, Mead pulp sales rep. in Chicago, took this picture. Looking over big lime kiln and chemical area in picture below (l to r): Mr. Brittain, Mr. Richmond, JOHN GRIEVE, mill manager, and Mr. Holland.

ELIMINATION OF VARIABLES = MORE UNIFORM MACHINE OPERATION



the Deculator System does this with COMPLETE Stock Deaeration

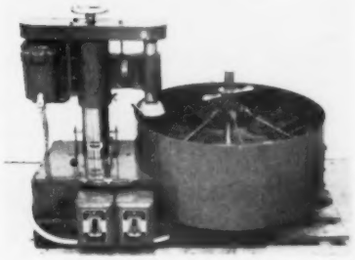
CCVO

CLARK & VICARIO CORPORATION
NORTH TARRYTOWN, NEW YORK

PULP & PAPER New Equipment and Supplies

Doctor Blade Grinder

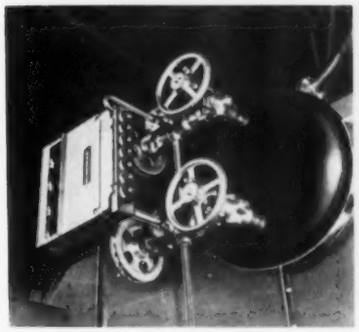
. . . Is Precise, Automatic



Applications: Precision grinding of doctor blades.
Advantages: Once job is set up, operator does not have to tend machine during cutting process. Automatic feed may be disengaged and the machine fed manually. Machines are very compact.
Specifications: Two models available, a self-contained cabinet model and a bench model, have heavy-duty ball-bearing grinder quill, ball-bearing mounted rotary table with positive clamping device for holding blade, automatic mechanical feed and self-contained coolant system.
Supplier: **Tidland Machine Co., Camas, Wash.**

Complete Gauge Assembly

. . . Requires Only Two Field Welds



Applications: For measuring boiler pressures.
Advantages: Completely welded assembly requires only two field welds to drum connections. Shutoff valves of locking type are provided in series with gauge valves. With Multi-Port continuous vision gauge, small round ports replace long glass and mica strips. Gauge is not removed from boiler for gasket changes or other normal maintenance. Bi-Color principle invariably shows steam red and water green. Complete port change requires only about 15 min. Each port is thermally independent permitting rapid starting.
Specifications: Available for 21 in. and 27 in. center-to-center of boiler connections in both integral tie bar and support tube construction, for parallel or normal viewing. Double-Safe gauge package with Multi-Port is for operating pressures above 900 psi.
Supplier: **Diamond Power Specialty Corp., Lancaster, O., OLive 3-6540.**

Manual Girdler

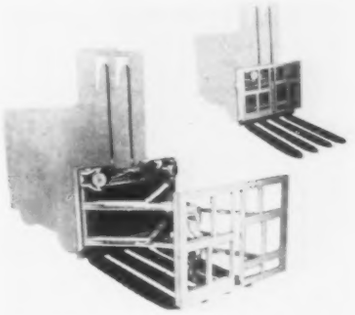
. . . Provides "Pocket" Tree Control



Application: A quick, efficient, lightweight manual tree girdler.
Advantages: This manual girdler which utilizes a special chipper-tooth chain is low cost ($29.95) easy to operate, light (it can be carried in back pocket) and efficient. It has double the rate of production of an axe and experience has proved it more successful. J. H. (Buzz) Johnson, chief forester of the Chesapeake Corp., West Pt., Va., operates the girdler in this picture. It was developed by J. B. Graves, chief forester for the Alabama Power Co. and has been used successfully in girdling more than 100,000 inferior trees of all types. It cuts to a depth of ⅝ inch.
Specifications: Girdler is made of 24 inches of chipper-tooth chain with a handle grip at each end. First 8 inches of chain is designed to break through tough outer lay of bark. Remaining 18 inches has control gauge between each tooth, to prevent digging in and snagging of cutting teeth.
Supplier: **Joe H. Brady and Associates, Birmingham, Ala.**

Load Push Attachment

. . . Speeds Loading



Applications: Car and truck loading, warehouse distribution, bulk material moving, materials handling.
Advantages: Compact design permits mounting on side shift carriage. Entire unit shifts with forks. No projection behind forward face of upright eliminates driver hazard.
Specifications: It is basically designed for 4,000 lb. trucks but can be mounted on large or smaller trucks. Equal flow of hydraulic oil to each pusher cylinder assures positive alignment of face plate. Roller guides support face plate.
Supplier: **Cascade Mfg. Co., P.O. Box 7587, Portland 20, Ore., CApitol 2-1821.**

Packless Pump

. . . Is More Compact



Applications: For metering and proportioning.
Advantages: New integral McCanna meter pump takes only 1/3 of space previously required. Has continuous flow characteristics through entire capacity range.
Specifications: Capacity is adjustable while in operation, pumping at pres-

sures up to 2,500 psi. Available with either Teflon-faced diaphragm or metallic bellows.

Supplier: **Hills-McCanna Co., 4624 W. Touhy Ave., Chicago 30, Ill., GRaceland 2-1150, ask for booklet No. 302.**

Lift Tables

. . . Simplify Lifting, Feeding

Applications: Sorting, counting, inspection, roll handling and positioning, weighing and skid loading, elevating stock for sheet feed, short hauling of light loads, etc.

Advantages: Tables have no superstructure so operator has access to work load from all angles. All models are easily installed; portable models simply have to be plugged in and stationary models may either be positioned on floor surface or recessed just deep enough to contain the collapsed height, thus becoming part of floor when not in use. Hand or foot switch stops table at any level on either rise or descent. Machine locks in position if power fails. Motor and pump assembly are compactly housed within the frame itself.

Specifications: Four basic series are available. Series L portable tables are available in six capacities from 500 to 12,000 lbs. Series LT, generally used in semi-fixed surface or permanent recessed installations, available in six capacities from 1,000 to 24,000 lbs. Series LD has same capacities as series LT and provides extra lateral stability required to position bulky, heavy wide or eccentric loads. Series LH, available in ten capacities from 1,000 to 10,000 lbs., provides work-positioning or feeding heights above normal elevations.

Supplier: **Southworth Machine Co., Portland, Me.**

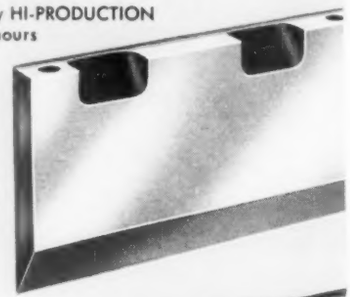
produce more uniform chips . . . reduce downtime and waste with

WAPAKONETA *Hi-Production*

CHIPPER KNIVES Wood room costs go down —when you install Wapakoneta HI-PRODUCTION Chipper Knives. Production is more uniform with fewer splinters and oversize chips . . . less dust. Knife edges stay sharp longer without reconditioning.

Check these features. You'll see why HI-PRODUCTION Knives mean top quality chips . . . extra hours of full capacity operation:

1. One-piece solid alloy tool steel gives greatest strength and lasting sharpness.
2. Special heat treatment conditions steel to absorb shocks . . . softer around slots . . . reduces breaks.
3. Keen knife edge and smooth face are precision ground for clean cutting. When necessary, sharpening is easy . . . fast.
4. Available in every size, single or double bevel. Engineered to fit the particular job.

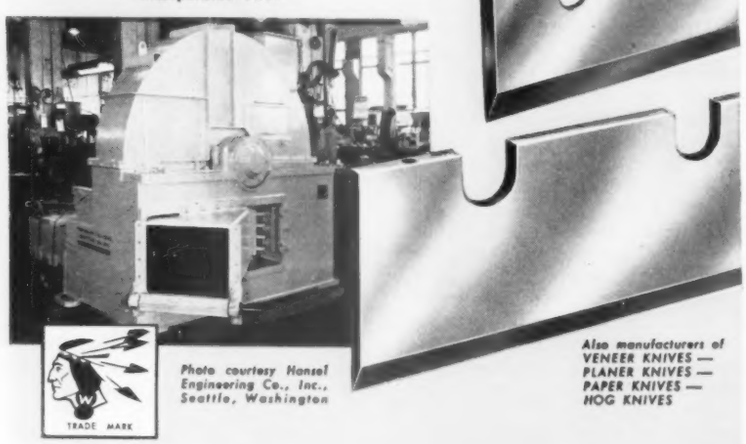


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THE WAPAKONETA MACHINE CO.

Wapakoneta, Ohio

Incorporated 1891



TRADE MARK

Photo courtesy Hansel Engineering Co., Inc., Seattle, Washington

Also manufacturers of
VENEER KNIVES —
PLANER KNIVES —
PAPER KNIVES —
HOG KNIVES

Flanges for PVC Piping

. . . Have Concentric-Serrated Faces



Applications: Handling corrosive liquids.

Advantages: Serrated-face flanges give better gasket retention, more effective seal and improved appearance. Concentricity eliminates chance of fluid traveling around spiral grooves between serrations until it leaks from flange.

Specifications: Flanges, with about 32 serrations per in., available in sizes from ½ in. through 6 in. in both socket and threaded types and both normal and high impact material.

Supplier: **Tube Turns Plastics Inc., Louisville, Ky., JUniper 7-7551.**

Slurry Pumps

. . . Now Have Hypalon Lining

Applications: Pumping corrosive liquids.

Advantages: Hypalon synthetic rubber linings on Olivite and Oliver Diaphragm Slurry Pumps provide greater resistance than heretofore to both abrasion and corrosion. It withstands wider range of temperatures and chemicals, particularly oxidizing solutions.

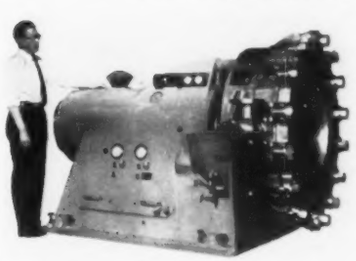
Specifications: Hypalon (chlorosulfonated polyethylene) replaces hard and soft Olivite, neoprene and other elastomers which will continue to be available. Hypalon lining is available on 1¼ and 2 in. size Olivite pumps and

1½, 2, 3 and 4 in. ODS pumps. A 4 in. Olivite is presently under development.
Supplier: **Dorr-Oliver Inc., Stamford, Conn., FIreside 8-7311.**

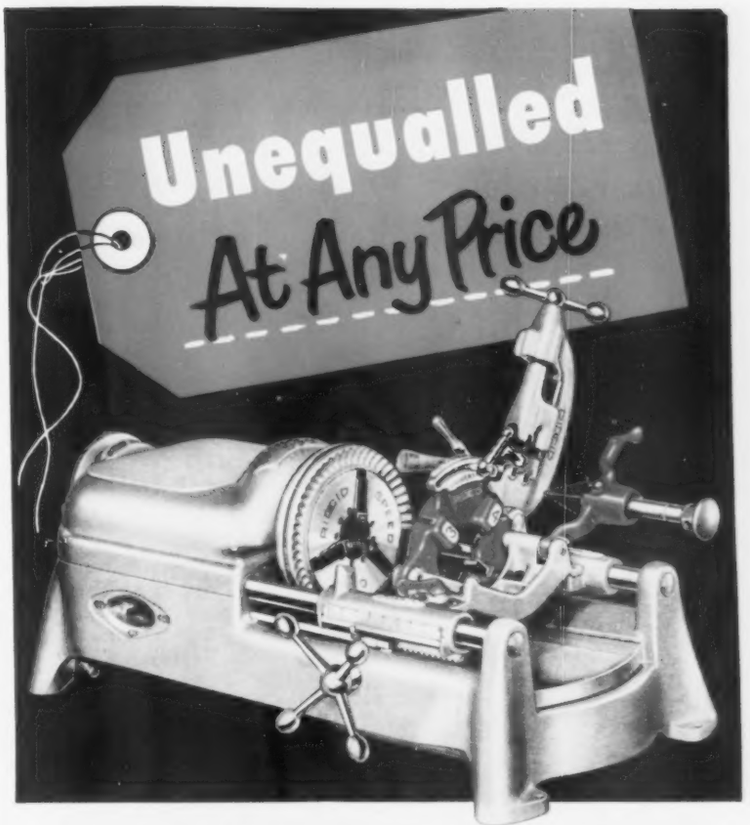
All-Synthetic Belting
. . . Is Stretch-Free

Applications: Works on both short center and fixed center drives, small pulleys with high belt speeds and high pulley ratios, carrier tapes and conveyor belts.
Advantages: Belt is almost 100% free of permanent stretch but retains elasticity. Can be made endless in a few minutes in the field or purchased made to specifications. Non-fraying edges permit cutting to any width. Ease of cementing allows use of short ends. No tension adjustments are required.
Specifications: Physical properties and characteristics of Texalon vary with thickness of belt. In thinnest form, it consists of double ply of nylon textile. In five other types, number and thickness of plies of plastic ribbon between two outer plies of textile determine strength of belt. Horsepower ratings and physical properties sent on request.
Supplier: **J. E. Rhoads & Sons, 2100 W. Eleventh St., Wilmington 99, Del., OLympia 5-6513.**

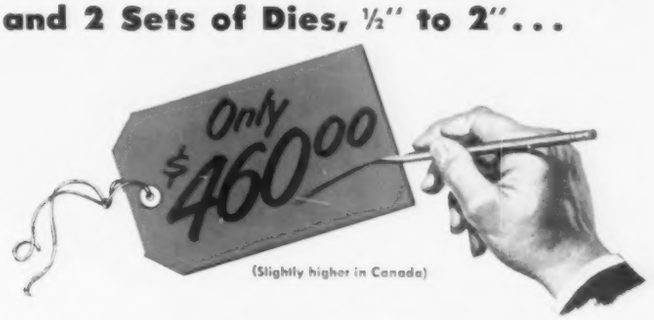
New Defibrator
. . . Has Larger Capacity



Applications: Grinding, defibrating.
Advantages: New D-42 Asplund Defibrator is larger and has self-adjusting hydraulic oil pressure system for accurate setting of grinding disc clearance and maintaining constant grinding pressure.
Specifications: Driven by 500 hp motor directly connected to main shaft by a gear coupling. Units now in commercial operation indicate capacity of about 100 tons per day of non-chemical and 200 or more tons per day of semi-chemical pulp.
Supplier: **American Defibrator Inc., Chrysler Bldg., New York 17, N.Y., MUrray Hill 9-6960.**



RIGID No. 535
Pipe & Bolt Threading Machine Complete with 1 Universal Die Head and 2 Sets of Dies, ½" to 2"...



Built like a machine tool, designed to thread, cut and ream with speed and ease no other machine offers you. Compare its slip-proof Speed Chuck, front chucking, instant size-change right in carriage, and many other RIGID features. It pays you to see and try this most-for-your-money 535 at your Supply House before you decide.

The Ridge Tool Company, Elyria, Ohio, U. S. A.

PULP & PAPER Equipment & Supplies

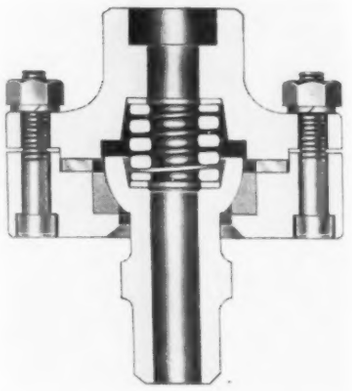
Automatic Knife Grinder

. . . Is Accurate and Rugged

Applications: Sharpening knives of various lengths.
Advantages: Grinding wheel has provisions to prevent horizontal play in feed mechanism. Protractor assures precise position of bevel. Calibrated rotatable mount permits hollow grinding when desired. Carriage travels in V-way preventing inaccuracies in cut. Abrasive material cannot fall on runways.
Specifications: Model 431 available in four sizes for maximum knife lengths from 88 in. to 154 in. Width is 6 ft. and floor space length ranges from 11 ft. 10 in. to 17 ft. 7 in. Feed mechanism advances grinding wheel .0003 in. each movement and can be set to move one, two or three notches at each cut. Carriage is reversed at end of each movement and motor stops when pre-set cut is made.
Supplier: **The Coe Mfg. Co., Painesville, O., Elmwood 2-3146.**

Swivel Joints

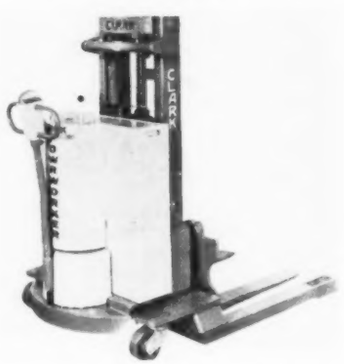
. . . Make Piping Movable



Applications: On high temperature steam piping connected to moving machine or equipment parts; for example, steam connections to multiple platen hardboard presses.
Advantages: Casing and retainer flange are steel, ball is hardened steel and spring is stainless steel, providing strength for high pressures. Special 11CAS gasket is made of specially treated high density carbon with relatively low coefficient of friction and is lapped to the ball. Movement between ball and gasket provides constant relapping which automatically adjusts for wear. Gasket is installed under compression in retaining flange to prevent leakage.
Specifications: Series 750 Type S swivel joint takes steam pressures to 750 psi and temperatures to 750° F. with 11CAS gasket. Other gaskets for specialized high temperature and pressure applications are available. Joints in sizes of 1 in. and 1¼ in. with screwed or welding ends are available from stock. Other sizes available to order.
Supplier: **Barco Mfg. Co., Dept. J-27, 500 N. Hough St., Barrington, Ill., BArrington 1700.**

Straddle-Type Stacker

. . . Added to Hand Truck Line



Applications: To lift and tier palletized goods.
Advantages: Mounted on a roller assembly, the Straddle Stacker's drive unit will traverse up and down as much as 3 in. to compensate for uneven floors and eliminate the possibility of the drive wheel losing traction when stabilizing caster passes over a high spot. Forward and reverse direction is controlled by butterfly switch in control head on steering handle. Brakes are automatically applied when steering handle is in either vertical or horizontal position.
Specifications: Capacity of Model 20 STF is 2,000 lbs. and of Model 40 STF (in picture) is 4,000 lbs. Depending on size of uprights, pallet can be lifted and tiered to height of 94 to 130 in. Truck will travel 2.8 m.p.h. empty and 2 m.p.h. loaded. Without battery, weight of Model 20 STF is 2,770 lbs. and of Model 40 STF, 3,190 lbs. Fork lengths available are 30, 36, 42 and 48 in.
Supplier: **Industrial Truck Div., Clark Equipment Co., Battle Creek, Mich., WOodward 2-6561.**

Chemical Pulping Processes

The high degree of chemical, mechanical and physical control over materials and operations in the Chemipulp and Chemipulp-KC systems results in maximum plant output, high pulp quality and low operating costs.

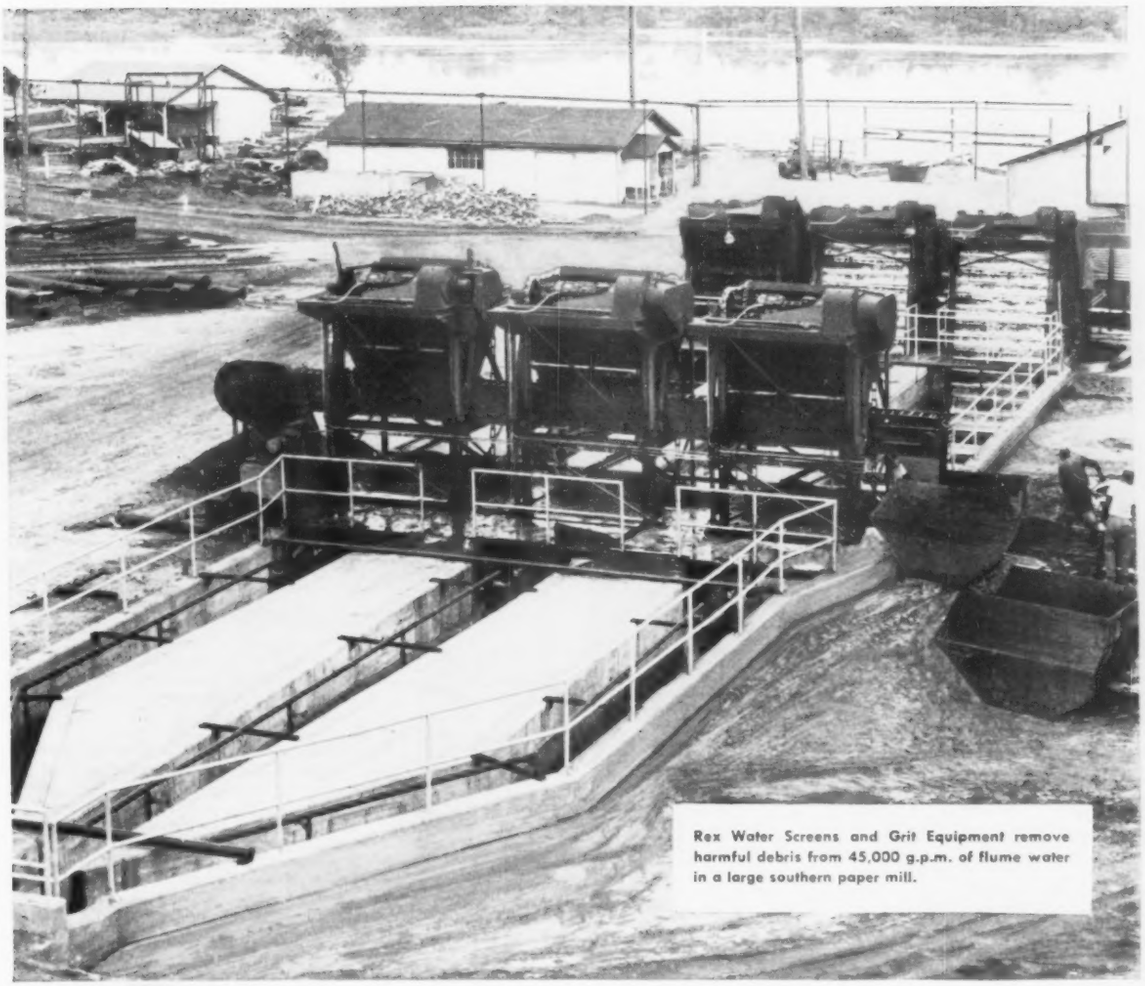
- Circulating Systems
- Chip Distributor
- Chip Pretreatment
- Waste-Liquor SO_2 Gas and Heat Recovery
- Independent Recovery System
- Jet-Type Sulphur Burners
- Hot Acid System
- Hydroheater
- Spray-Type SO_2 Gas Cooling System
- Acid System (*Bubble Absorption*)

Chemipulp Process Inc.
Watertown, N. Y.

Associated with
Chemipulp Process Ltd., 253 Ontario St., Kingston, Ont.

●

Pacific Coast Representative
A. H. Lundberg, Inc., P. O. Box 202, Mercer Island, Wash.



Rex Water Screens and Grit Equipment remove harmful debris from 45,000 g.p.m. of flume water in a large southern paper mill.

PLUS Values that cut your woodyard handling costs

Many a pulp mill today is looking to flume transportation to cut log handling costs in the woodyard. It's simplicity itself...just a simple concrete trough and water to transport pulp logs from yard to mill. And here's one way to make it even more **economical: use** the water over and over again in a closed circuit.

That's where the *plus values* in Rex Traveling Water Screens and Grit Collectors fit your cost-cutting picture. These efficient units remove all harmful grit and debris...bark, dirt, stones and fibers...from the flume water, preventing damage to pumps and other equipment. Water can be used over and over again since these units completely remove all harmful debris.

Rex Traveling Water Screens and Grit Collectors are easily installed in concrete channels, generally an extension of the flume channel behind the jack ladders. They're ruggedly built...designed to assure lowest possible operating costs and exceptionally long life. For complete information, write CHAIN Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

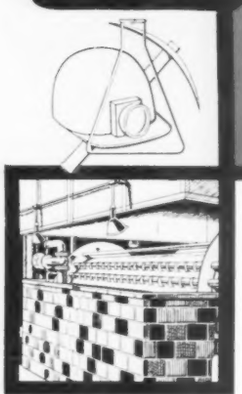
CHAIN BELT

For Effective Removal of

RESIDUAL CHLORINE

TC TENNESSEE CORPORATION

LIQUID SULFUR DIOXIDE HIGHEST QUALITY SO_2



Tennessee's liquid Sulfur Dioxide is a most efficient and economical antichlor. Removes residual chlorine and other materials which cause color reversion or yellowing with age. It also eliminates excessive residual chlorine in water.



We would like to consult with you on the possibilities of Tennessee's Liquid Sulfur Dioxide in your processing.

Available In:

- CYLINDERS
- TON DRUMS
- TANK TRUCKS
- TANK CARS

TENNESSEE TC CORPORATION

617-29 Grant Building, Atlanta, Georgia

ZW

ZELLSTOFFFABRIK WALDHOF

Zwei Herren unseres Vorstandes möchten nach über 30-jähriger Tätigkeit in absehbarer Zeit, die zur Einarbeitung eines Nachfolgers ausreicht, aus Altersgründen in den Ruhestand treten. Als Nachfolger suchen wir

eine oder zwei Persönlichkeiten,

(Papiermacher oder Chemiker).

Unsere Gruppe umfasst zwölf Fabrikationsstätten für Zellstoff, Papier, Papierverarbeitung und Wellpappkisten und hat einen Jahresumsatz von etwa 400 Mill.DM. Sie beschäftigt über 9.000 Menschen. Aus Nadel- und Laubholz werden Sulfitzellstoffe aller Art, insbesondere für die Feinpapier- und Kunstfaserindustrie und Chemische Industrie, hergestellt. Das Papierprogramm umfasst auf 25 Papiermaschinen Cellulosepapiere, ferner feine Schreib- und Druckpapiere und veredelte Papiere, weiter Natronpapiere und Säcke. Ein Teil des Papiers wird für Handtücher, Servietten und hygienische Papiere weiterverarbeitet. Die Sulfitablaugen werden zu Alkohol und Hefe vergoren: ein Teil wird eingedampft und zu Spezialprodukten verarbeitet. In kleinem Umfang werden pharmazeutische Grundstoffe hergestellt.

Die Bewerber sollen diesem umfassenden Produktionsprogramm gewachsen sein. Sie müssen daher über eine nachweislich erfolgreiche Tätigkeit als Leiter grosser Werke verfügen, Führungspersonal mit Erfolg und sozialem Verständnis geleitet haben und Anpassungsfähigkeit für die Zusammenarbeit innerhalb des Führungsgremiums besitzen.

Je nach Erfahrung wird die Leitung des Zellstoffbetriebes einschliesslich des Forschungslaboratoriums und des chemischen Teils oder die Leitung des Papierbetriebes oder die Stellvertretung der technischen Gesamtleitung oder die technische Gesamtleitung sowie bei entsprechender Eignung und nach einzuholender Einwilligung unseres Aufsichtsrates die Stellung eines stellvertretenden oder ordentlichen Vorstandsmitglieds geboten.

Je nach der Art der zu übernehmenden Stellung wird diese dotiert; sie ist mit einer angemessenen Wohnung und Altersversorgung verbunden.

Auch solche Herren, die nur auf dem einen oder anderen Gebiet Erfahrungen haben, kommen für die angebotenen Stellungen in Frage. Es wird gebeten, die Bewerbungen kurz zu fassen. Sie werden auf Wunsch streng vertraulich behandelt und können auch durch Dritte eingereicht werden. Lichtbild, handgeschriebener Lebenslauf und Mitteilung des frühesten Eintrittstermins sind zu richten an:

Dr. Friedrich Dorn
Vorsitzender des Vorstandes
der Zellstofffabrik Waldhof
Wiesbaden, Leberberg 9

Allis-Chalmers To Build Laboratories near Milwaukee

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has announced plans for construction of new engineering, development and research laboratories in Greendale, a Milwaukee suburb about two miles south of the Allis-Chalmers West Allis Works.

The new facilities will be housed in a one-story masonry, glass and steel panel building to be erected on a 30-acre site.

Among the projects to be carried out by the laboratories will be design, construction and testing models, mockups and prototypes of nuclear reactors and associated equipment. The most modern electronic calculating equipment will be used.

CIBA Co. Builds New Headquarters In New Jersey

A modern streamlined structure now underway at Fair Lawn industrial park, Fair Lawn, N. J., will become upon completion the executive, sales and technical headquarters for Ciba Co. Inc., dyes, plastics, and chemical specialties. The new building will replace entirely the present Ciba Co. Inc., Greenwich Street facilities in New York City.

Your Choice for Convenience in PITTSBURGH



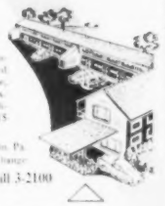
Hotel Pittsburgher

Right in the heart of the Golden Triangle. 600 outside rooms with TV and every comfort of modern hotel design. General Forbes Lounge and Dining Room. Air Conditioning. Airport Limousine and Taxi Service.

Forbes Avenue Below Grant

ATlantic 1-6970





Jacktown Motor Hotel

The very finest accommodations. 60 air conditioned rooms with TV, telephone, combination tile baths. Excellent dining room. Facilities for group parties 15 to 500.

Route 30 Irwin, Pa.
1 mile West of Irwin Interchange

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Hotel Pittsburgher Motel

KNOTT HOTELS

Opposite Greater Pittsburgh Airport Intercontinental Airport Parkway West. Six luxurious air conditioned rooms with tile baths, TV, private phone. Courtesy car to and from airport.

AMherst 4-5152

Joseph E. Duddy, Gen. Mgr.

*Teletype Service. For immediate confirmation of reservations at no charge. Telephone any Knott Hotel, or teletype PG 29



James M. McAlear Heads New Division for Worthington Corp. . .

Mr. McAlear, formerly mgr. of the Mason-Neilan pulp and paper mill dept., becomes mgr. of a new instrument sales div. He will supervise the sale of the complete Masoneilan instrument line. H. P. FISHWICK becomes head of the pulp and paper mill dept. He was supervisor of sales and service engineering for machine drying and drainage systems.



Montville, Black-Clawson V.P.

Don H. Montville has been appointed vice-president in charge of sales of the Shartle Division of The Black-Clawson Co. Mr. Montville has been sales manager of Shartle which manufactures Black-Clawson pumps, jordans and other stock preparation equipment. He began his career in the paper mill equipment industry when he joined the original Shartle Bros. Machine Co. in 1920. Up to 1927, when Shartle became a division of Black-Clawson, and for many years later, Mr. Montville traveled to paper mills throughout the United States and Canada as a sales engineer.



Arnold ..... Jones

Pusey & Jones Promotes Two

Frank C. Arnold was appointed sales engineer to represent Pusey & Jones Corp.'s paper machinery div. in New England and northern New York. He was formerly with Downingtown Machine Works. His headquarters will be in Henderson Harbor, N.Y. Fred C. Jones became sales engineer representing the paper machinery div. in the south and southwest, as reported in February PULP & PAPER. He was most recently with Black-Clawson. He will headquarter in Atlanta, Ga.



Perrin, Western Mgr., Reliance

ANDREW C. PERRIN has been promoted from district sales mgr. of the San Francisco-Pacific Northwest district for The Reliance Electric & Engineering Co. to Western regional sales mgr., announces Sales Mgr. C. V. GREGORY. He will continue headquarters at the company distribution center in Burlingame, Calif. He is a 1940 graduate from Purdue, joined Reliance in 1946 after release from army signal corps. He served in the China-Burma-India war theater. WALTER A. JENSEN is appointed district mgr. in Los Angeles and will report to Mr. Perrin.

AMOSLAND RD. AT B. & O. R.R.
HOLMES, PENNA.
LEHIGH 2-7900

NELSON COMPANY

STEAM FITTERS — PIPING CONTRACTORS
CARBON — STAINLESS — ALLOY — PLASTIC — PVC MATERIALS
PIPING FABRICATORS

STEAM — PULP & PAPER MILLS — STEEL MILLS — GAS & WATER UTILITIES
CHEMICAL PROCESS SYSTEMS — REFINERIES — SEWAGE SYSTEMS



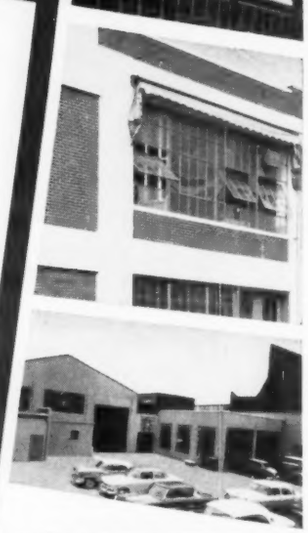
RE-NEW-COAT Resurfaces, Protects and Decorates Masonry Buildings In One Application!

Re-New-Coat, with an outstanding record of performance even under severe conditions, actually anchors itself into masonry surfaces and becomes part of the structure itself. It is resistant to alkali, acid fumes, smokes, gases and other corrosive factors. Remarkable adhesive qualities of Re-New-Coat, due to presence of Devran Epoxy Resin, insure a firm tight bond to masonry.

ECONOMY — Because of the several mil thickness of dense structurally strong coating, built with only one application, there is no need for a second time-consuming application.

LONG LIFE PROTECTION — Prolonged protection against surface erosion is just one of the beneficial characteristics inherent in Re-New-Coat.

WEATHER PROTECTION — Masonry structures subjected to constant erosion caused by driving rains and chemical fumes common to industrial areas are effectively protected for years to come.



TRUSCON "RE-NEW-COAT" with Devran Epoxy Resin actually extends the life of your buildings!



FIELD DEMONSTRATION

Ask for field demonstration in one or more of the attractive colors available!



TRUSCON Laboratories
Industrial Maintenance
Division of Devoe & Raynolds Co., Inc.
Detroit 11, Michigan

TRUSCON Laboratories
Dept. Y-22, 1700 Caniff
Detroit 11, Michigan

☐ Have field engineer call for appointment.
☐ Send more information on RE-NEW-COAT at once.

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

LITERATURE

New Vibrating Screen Bulletin

Design and construction features of "Low-Head" horizontal vibrating screens, such as easy to remove unit mechanism, are described in a new bulletin released by Allis-Chalmers. The bulletin diagrams installation methods along with floor mounting arrangements for the screen and carries size and dimension tables on cable suspended and floor mounted units. It also describes such auxiliaries as the "Sta-Kleen" deck used primarily for dry screening moist coal, and the "Thermo-Deck" unit used on vibrating screens handling fine, moist materials. Copies of "'Low-Head' Horizontal Vibrating Screen," 07B6330B, are available on request from Allis-Chalmers, Milwaukee 1, Wis.

Provides Data on Roll Clamp

A new bulletin gives description and specifications of three variations of 7,000 lb. roll clamp, a completely hydraulic clamp, pull-pin adjustable clamp and bolt adjustable clamp. Write to Towmotor Corp., 1226 E. 152nd St., Cleveland 10, O.

Sulfite, Cold Soda Pulping Data

The U. S. Forest Products Laboratory announces new publications available. Report No. 1408, "Sulfite Pulping of Engelmann Spruce," outlines yields and strength values as compared to other spruce pulps.

"Special Considerations Affecting Improvements in the Cold Soda Pulping Process," Report No. 2101, explains results of applying the cold soda process to several hardwoods to determine the effect of certain variables.

A newly revised "List of Publications on Glue, Glued Products, and Veneer," is also available.

Write the Director, U.S. Forest Products Laboratory, Madison 5, Wis.

Metering and Control Systems

A new bulletin describes purpose, design and operation of Bailey Metering and Control Systems. A discussion of pneumatic and electric telemetering and pneumatic control is included, along with literature references for all products making up these systems.

Write for Bulletin 500, Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, O.

Gives Frame Assignments

A new bulletin gives NEMA frame assignments and overall dimensions of a-c. motors in new NEMA frame sizes from 364U to 445U. Punched for insertion in notebooks, the bulletin explains how to quickly compare dimension of Series C motors with Series D (new NEMA frame sizes). Write for bulletin B-1284-1, Reliance Electric and Engineering Co., 24701 Euclid Ave., Cleveland 17, O.



Johns-Manville CHEMPAC® PACKING withstands active acids and alkalis

CHEMPAC is a new Johns-Manville Packing which combines the sealing action and heat-resistance of asbestos with the all-around chemical resistance of Teflon*. Because of its versatility Chempac greatly reduces the number of packing styles needed for mill equipment. Moreover, stocking and inventory present no problem because the inert ingredients of Chempac do not deteriorate.

Chempac is outstanding in service against most acids and alkalis at temperatures to 500°F. It is especially recommended for use in pumps handling calcium bisulfite cooking liquor, sulfurous acid and relief gases . . . on relief valves on sulfite digesters . . . on valve stems exposed to chlorine, and for other equipment in service against corrosive liquids.

Chempac Packing is available in coil, spiral and ring form for rod, plunger and valve stem applications. Johns-Manville also manufactures Chempac Gaskets, made of plies of asbestos cloth treated with Teflon.

Your Johns-Manville Packing Distributor can help you select the right Chempac Packing or Gasket for your application. Or write Johns-Manville, Box 14, New York 16, N. Y. In Canada, Port Credit, Ontario. Ask for PK-124A.

*Trade mark for DuPont Tetrafluoroethylene resin

Pioneer in packings for over 100 years

JM PRODUCTS

Johns-Manville PACKINGS & GASKETS

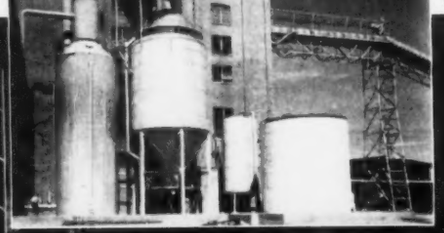
18

HORTON® STRUCTURES help boost production for Mead Corporation mill

Eighteen CB&I welded steel structures, ranging from digesters and liquor storage tanks to a 250,000-gallon Watersphere®, have played an important role in the increased output and further integration of Mead Corporation's 210-ton pulp mill at Chillicothe, Ohio.

The same specialized design, fabrication and erection services furnished by CB&I for this expansion program are being tendered *daily* throughout the paper and pulp industry. Write our nearest office for further details.

Cone-bottom blow tank equipped with cyclone separator; two liquor measuring tanks and 26-ft. liquor storage tank. All fabricated and erected by CB&I.



PP23

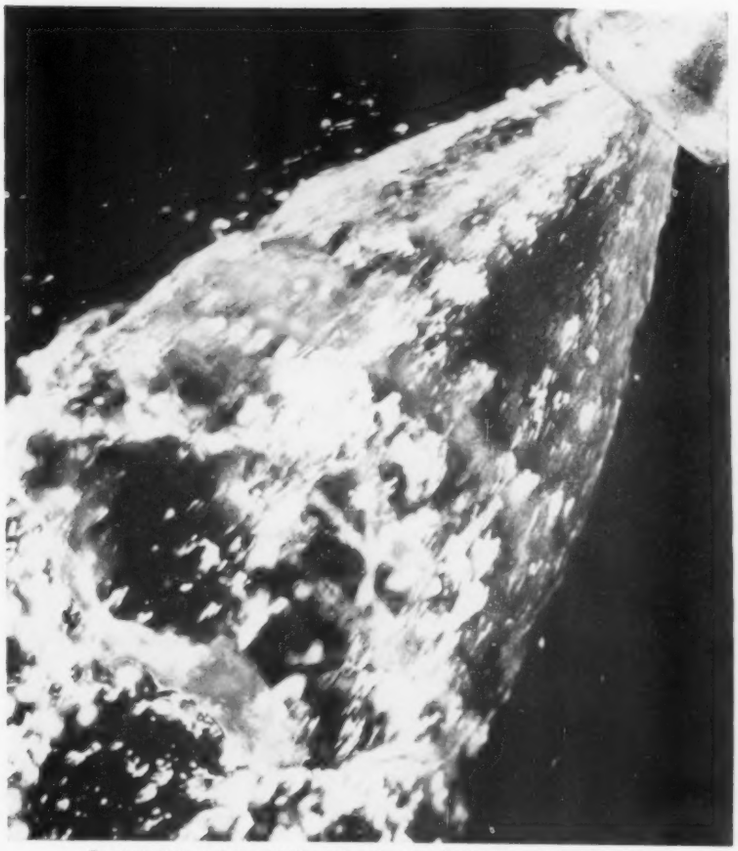
Some of the CB&I structures at this Mead mill include:

(1) 24-ft. diameter caustic liquor storage tank
(2) 15-ft. diameter by 50-foot high foam tank
(3) 26-ft. diameter black liquor storage tank

CB&I

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • South Pasadena • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.



To show fluid volume, photographer Bernard Hoffman uses the free discharge of water from an ordinary garden hose.

Controlling Volume in Fluid Engineering

Few volume control problems can be solved with a quick twist of your wrist the way you do with a garden hose nozzle. In processing equipment, the factors of pressure, flow, and time must also be carefully considered. That's why, when you need accurate answers, you can depend on the broad engineering background S. Morgan Smith offers.

Take an SMS Rotovalve, for instance. Its full line opening means least head loss, lower pumping costs. Hydraulic imbalance and mechanical design make the Rotovalve easy to operate. Fast initial shut-off limits reversal of flow, and closing can be in one second or as slow as required. Final closure is positive and drop tight throughout valve life. SMS Ball Valves, similar to Rotovalves, offer many of these same advantages.

Information on the complete SMS line – R-S Butterfly Valves, Rotovalves and Ball Valves may be obtained by calling our nearest representative. Or, write S. Morgan Smith Co., York, Pa., for data on standard valves or special, engineered applications.

S. MORGAN SMITH HYDRODYNAMICS

AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED, TORONTO

Rotovalves • Ball Valves • R-S Butterfly Valves • Free-Discharge Valves • Liquid Heaters • Pumps • Hydraulic Turbines & Accessories

PULP & PAPER CHEMICALS COLUMN

Hooker Plant Resumes

The big new Hooker Chemicals Ltd. plant at North Vancouver, B. C., temporarily shut down soon after opening owing to the industry-wide pulp and paper strike in British Columbia, has resumed full production and is meeting continued requirements of pulp mills for chlorine and caustic soda, according to Works Manager Robert E. Noble. The Hooker Electrochemical Co's subsidiary was built at a cost of $12,000,000.

Solvay Plant in South

Completion of a new dense soda ash plant at Baton Rouge, La. was announced today by Solvay Process Division, Allied Chemical. The new facilities more than double previous capacity. T. H. Munro, Solvay Process president, says the plant is now in a position to further extend service to customers in Southern United States. Shipments by rail, truck or water movement can be made at once from the new installation. Other Solvay soda ash plants are at Syracuse, N. Y. and Detroit.

Cyanamid Change in Canada

North American Cyanamid Ltd., a major Canadian chemical company, has changed its name to Cyanamid of Canada Ltd. and will establish headquarters in Montreal. Dr. L. P. Moore, recently elected president of the company, said the changes were the result of a pronounced trend towards integrated Canadian operations and increased production activity in Canada.

Monsanto Buys Georgia Plant

Monsanto Chemical Co. purchased the physical assets of Filtered Rosin Products, Inc., Baxley, Ga., manufacturer of paper size and other gum rosin products. Robert M. Morris of St. Louis, asst. gen. mgr. of Monsanto's Organic Chemicals Div., was elected president of the new company in addition to his Monsanto duties. John S. Laws of Baxley, Ga., vice pres. and gen. mgr. of Filtered Rosin Products, continues in these capacities.

Shipping Hydrogen Peroxide

Shell Chemical Corp. has begun shipping hydrogen peroxide in tank car quantities from its new plant at Norco, La.

Appointments in the News





Convey ..... Huckman

New Regional Managers

F. Richard Convey heads the newly-formed Northeastern region (New England, N.Y., N.J., Pa., Md. and Del.) for John W. Bolton & Sons, Inc. He is a graduate of Boston U. and was gen. mgr. of Electro Devices Co. of Boston.

E. R. Huckman, becomes asst. field sales mgr. for Foxboro Co. With field sales mgr. J. J. Burnett he will coordinate sales in northern and eastern regions, and will continue as regional mgr. of New York area. His duties as mgr. of N.Y.C. branch are assumed by H. R. Cushman, former sales engineer at New York. Mr. Huckman is an MIT graduate, joined Foxboro in 1927.

Heads Staley Field Sales

Appointment of NATT K. HAMMER to the newly-created position of field sales mgr. for industrial products of the A. E. Staley Manufacturing Co. corn division is announced by L. S. Rochm, vice pres. and division mgr. Mr. Hammer had been assistant manager in industrial sales since 1954. He joined Staley's in 1945.

Joins Penick & Ford

JOHN P. BAINBRIDGE, Jr., formerly with Monsanto Chemical Company, has joined Penick & Ford, Ltd., Inc., as assistant sales service manager to Dr. J. E. Killinger. His headquarters will be at Cedar Rapids, Iowa. Mr. Bainbridge graduated as a chemical engineer from MIT in 1936, when he joined Monsanto.





Moe ..... Houff

Promoted by F. C. Huyck & Sons

William Moe, supt. of felt mfg., Huyck Felt Co., a division of F. C. Huyck & Sons, Rensselaer, N.Y., has been named a vice president, according to Roderick T. Clarke, vice pres. and gen. mgr. Mr. Moe's responsibilities will be concerned chiefly with the manufacturing of papermakers' felts at Rensselaer and Aliceville, Ala. plants. He was born in Norway and received his early training in Norway and Sweden, graduated from Leeds University, England, and in 1928 joined Kenwood Mills, Canadian subsidiary of Huyck.

Huyck also announces the promotion of William H. Houff to assistant director of chemical research. He received his ph.d. from Michigan State, has served Huyck for three years.





Brandt ..... Nunamaker

New Faces on West Coast

Walter B. Brandt, formerly manager of textile, paper and leather chemicals, New York City headquarters, General Dyestuff Co., has been promoted to West Coast branch manager in San Francisco. Mr. Brandt has been with the company for 26 years, joining on graduation from Bowdoin College. He replaces the late Robert M. True.

Dale Nunamaker joins David Brown, Inc., as engineering sales rep for the Gear Div. in the Pacific Northwest territory, according to Stuart Walters, sales manager. Mr. Nunamaker will base at the new factory branch office at 1224 S.W. Morrison St., Portland 5, Ore. He is a native of the Northwest and graduate of U. of Washington.



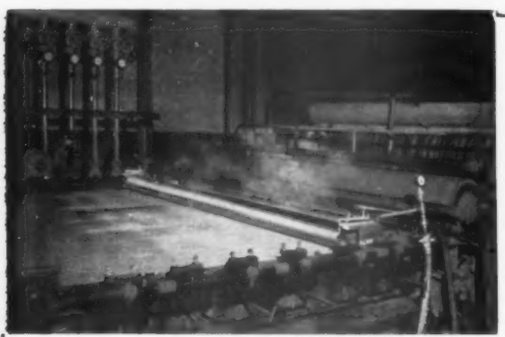


Crannell ..... Hill

In New Posts with Patton Mfg. Co.

George S. Herbert, president, announces Wayne T. Crannell, until now sales mgr. of Patton's paper mill division, has been named general mgr. of the paper mill division. He has 16 years of experience in the pulp and paper field and he received his education at Lehigh University. He joined Patton in 1954

Charles E. Hill has been named sales engineer at Patton Mfg. He has served as chief engineer but recently requested to transfer to sales, so will now represent the company in the field. He hold a b.s. in engineering from Duke and an m.s. degree from Delaware.



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Gladstone, Oregon

Increase
Paper Production
with
DUPASQUIER DRIPLESS STEAM SHOWER BOX

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  THUS FREEING WET MAT
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Custom Built for Any Machine
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GREENVILLE, S. C.
Paper and Pulp Mill Construction, Equipment Erection and Piping

MERRICK WEIGHTOMETER
Weighs on Troughed or Flat Belt Conveyor
Level or Inclined
Write for Bulletin 375
MERRICK SCALE MFG. CO. 185 Summer St. Passaic, N. J.

A FEW INTERESTING OBSERVATIONS CONCERNING SPICES, FOOD AND ALBERTA HI-BRITE BLEACHED KRAFT PULP (MOSTLY ALBERTA HI-BRITE BLEACHED KRAFT PULP)

Food can be as flat as a Sahara landscape . . . or as exciting as a day in Spring. The vital ingredient that makes the difference is *spice*. No pound cake is worth mentioning without *ground mace*, curried dishes owe their savor to *tumeric*, poultry dressing is nothing without *thyme*. The spice of your choice will produce the type of flavor, aroma and piquancy you prefer. In very much the same manner, Alberta Hi-Brite, when added to furnish, is the vital ingredient that determines the characteristics of excellence you desire.

Alberta Hi-Brite is the one bleached kraft pulp that gives your paper extra-high folding and tensile strength . . . plus formation and printability, qualities usually associated only with low-strength pulps. It lends opacity and cleanliness . . . makes your pulp white enough, bright enough for producing even the finest writing papers, thanks to a new *exclusive* multi-stage chlorine dioxide bleaching process. And, Alberta Hi-Brite has the unique ability to develop good characteristics *whether your product calls for light or extensive refining.*

To accommodate production facilities, the town of Hinton in Alberta, Canada was specially built. Here, Alberta Hi-Brite is produced at a capacity rate of 400 tons per day. Four million acres of adjacent forest reserves assure the mill a perpetual yield of spruce and lodgepole pine, the slow-growing softwoods famous for their longer, thinner fibres and superb pulping qualities.

For full information on how Alberta Hi-Brite can improve the quality of your product, write: Dept. PP-358, St. Regis Paper Company, 150 East 42nd Street, New York 17, New York.

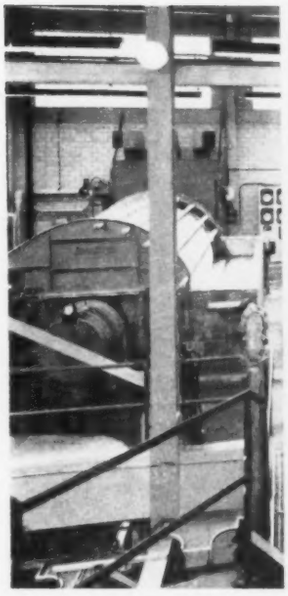
KRAFT DIVISION

St.Regis PAPER COMPANY

Pulp Sales Offices: NEW YORK • CHICAGO • SAN FRANCISCO • TORONTO • MONTREAL

New Hardwood Mill at Finch, Pruyn Equipped with

Dorr-Oliver Continuous Pulp Bleaching System and Oliver Brownstock Washing System





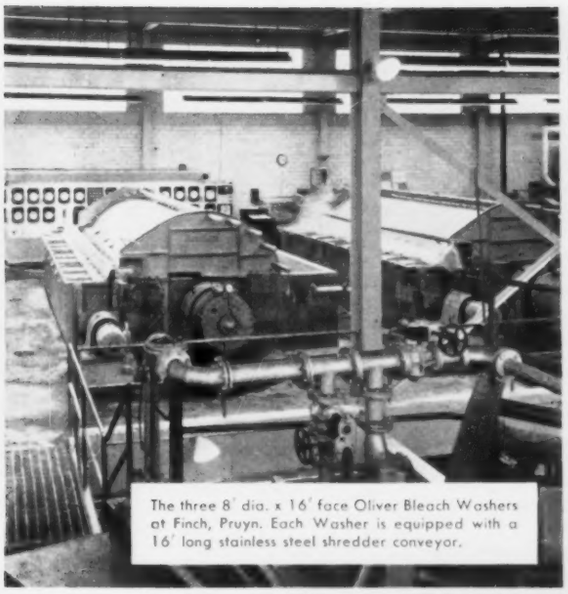
When Finch, Pruyn and Company's new neutral sulphite mill was dedicated late in 1957, it also marked the operation of the first complete Dorr-Oliver Continuous Pulp Bleaching System. Located in Glens Falls, New York, the new multimillion dollar Finch, Pruyn mill is manufacturing hardwood pulp for production of high strength, high brightness, and economically priced printing and converting papers. Present production of the semi-chemical pulp mill ranges between 70 and 100 TPD and is geared for an eventual capacity of 140-150 TPD.

Based on certain equipment designs by the James Brinkley Company of Seattle, Washington, the new D-O Bleach System supplements the existing Oliver Brownstock Washing System, the Dorr Recausticizing System, and the complete line of D-O industrial water and waste treatment equipment which have been commercially available to the pulp and paper industry for many years.



Additional facts, figures and photographs of the bleach equipment may be obtained by writing Dorr-Oliver Incorporated for a copy of Bulletin No. 3305, The Dorr-Oliver Continuous Pulp Bleaching System . . . just released.

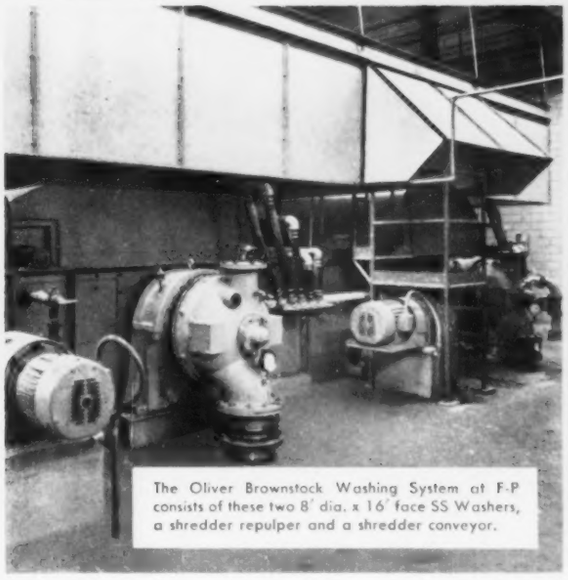
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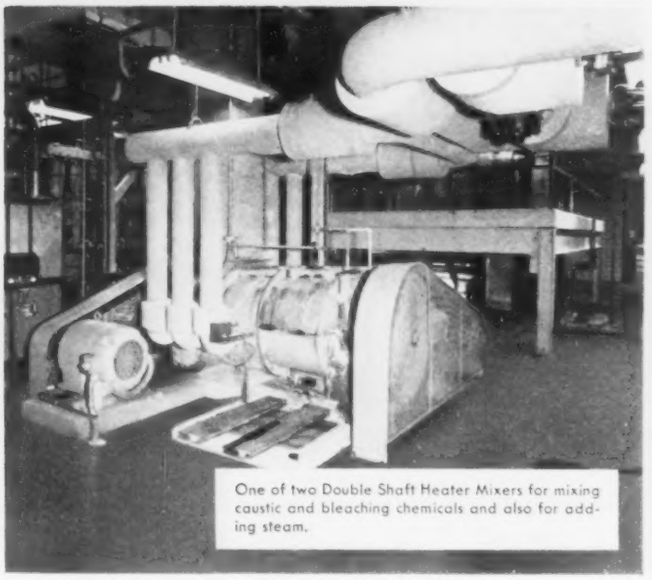
The three 8' dia. x 16' face Oliver Bleach Washers at Finch, Pruyn. Each Washer is equipped with a 16' long stainless steel shredder conveyor.



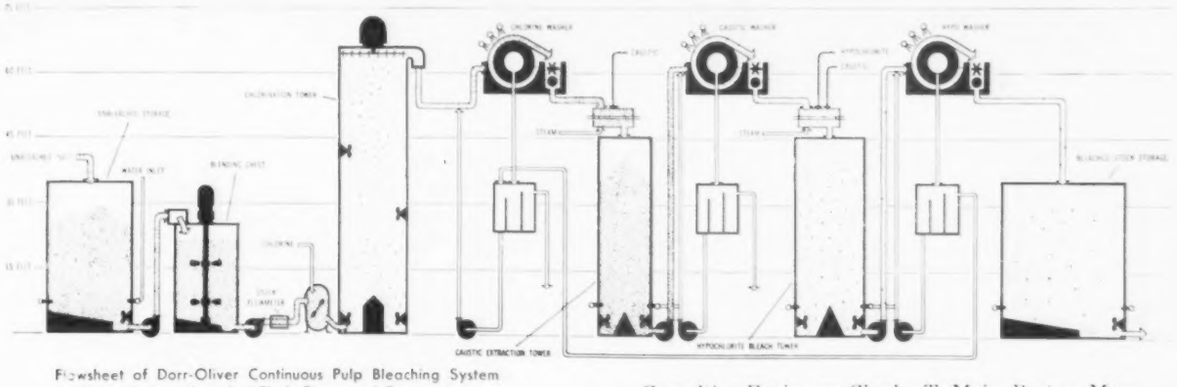
The Dorr-Oliver Bleach Tower Dilution Nozzle at F-P provides uniform dilution at the base of the high density bleach towers.



The Oliver Brownstock Washing System at F-P consists of these two 8' dia. x 16' face SS Washers, a shredder repulper and a shredder conveyor.



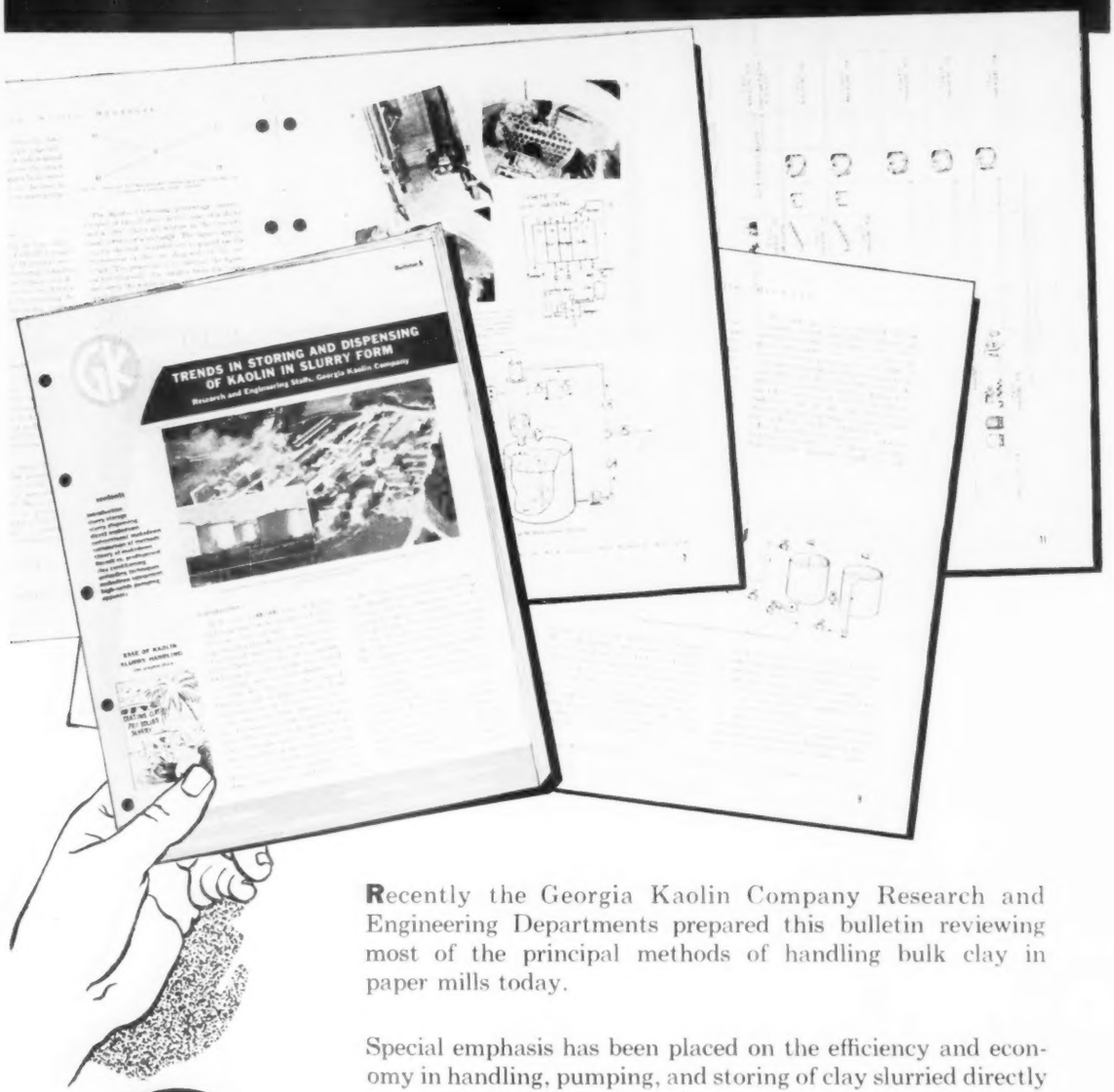
One of two Double Shaft Heater Mixers for mixing caustic and bleaching chemicals and also for adding steam.



Flowsheet of Dorr-Oliver Continuous Pulp Bleaching System similar to that employed at Finch, Pruyn and Company.

Consulting Engineers: Charles T. Main, Boston, Mass.

Modern Trends in STORING and HANDLING CLAYS



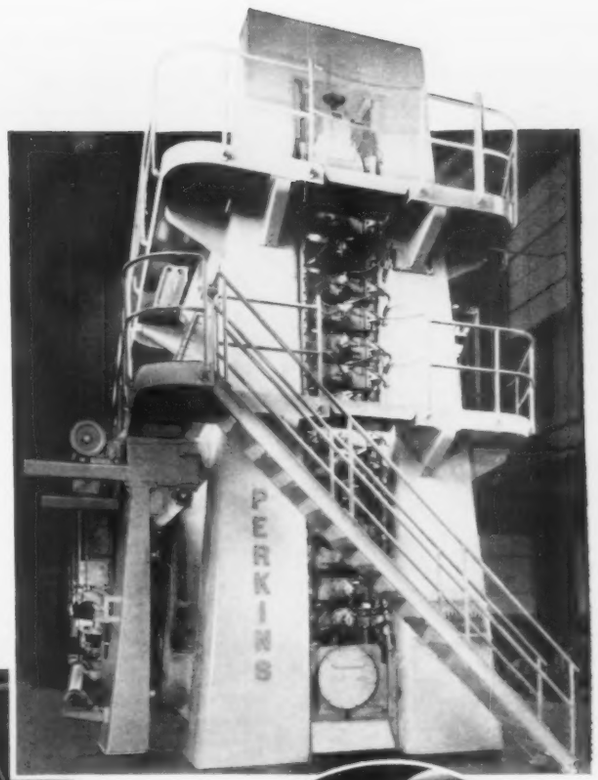
Recently the Georgia Kaolin Company Research and Engineering Departments prepared this bulletin reviewing most of the principal methods of handling bulk clay in paper mills today.

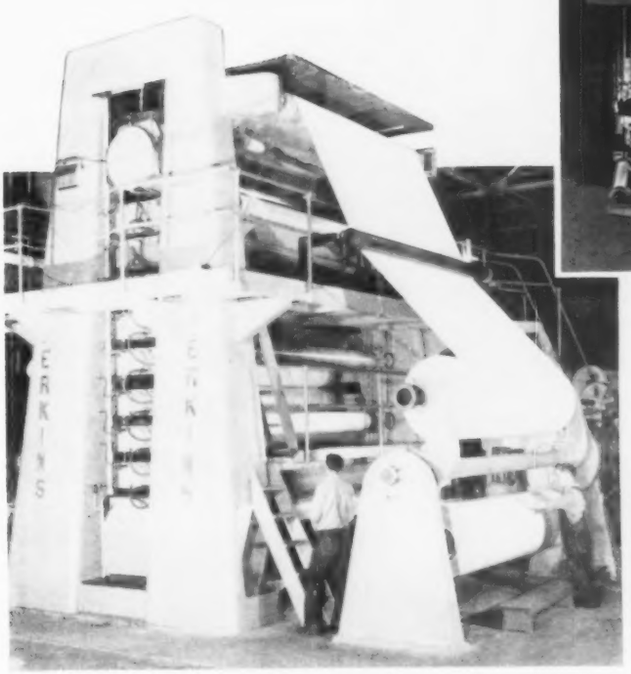
Special emphasis has been placed on the efficiency and economy in handling, pumping, and storing of clay slurried directly from the railroad car.

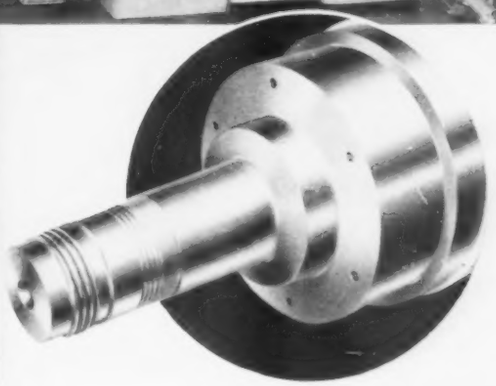
Paper mill engineering staffs studying the expansion or modernization of their bulk clay handling plants will find the charts, tables, and data contained in this bulletin very useful in planning their future systems.

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2 PERKINS Speed and Pressure GIANTS for the Paper Industry







"Engineering features years ahead"

Many exclusive engineering features in rugged construction and appearance.

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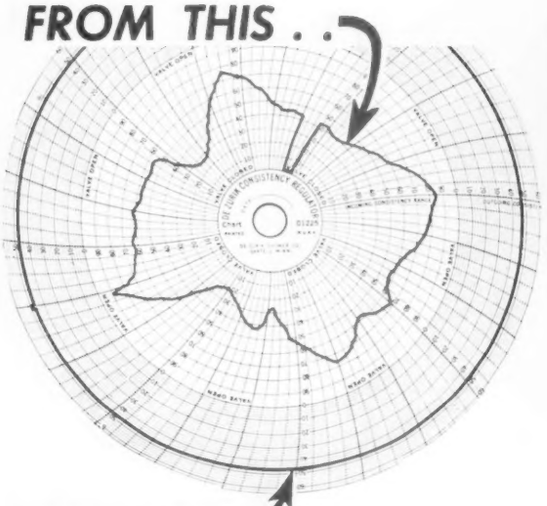
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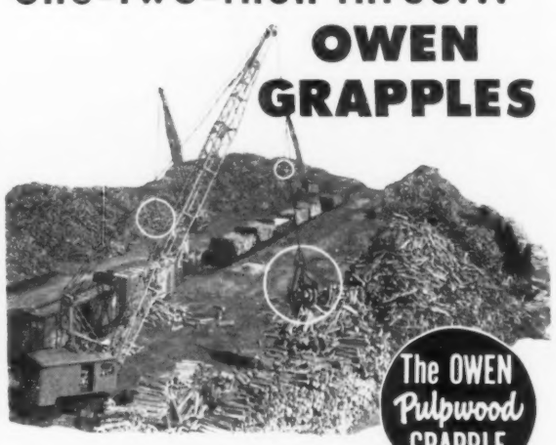
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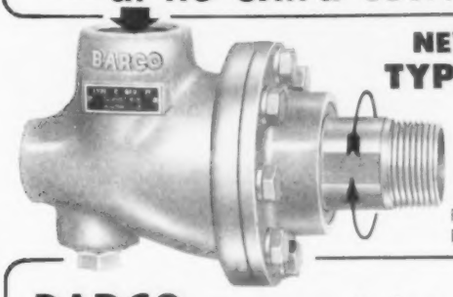
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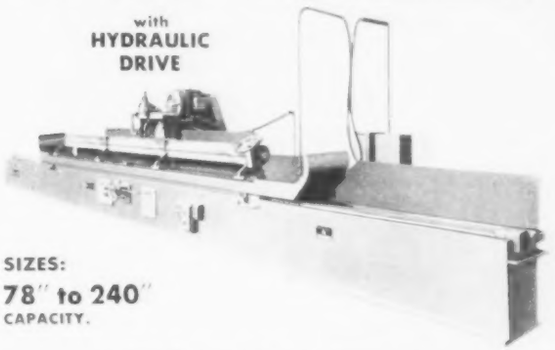
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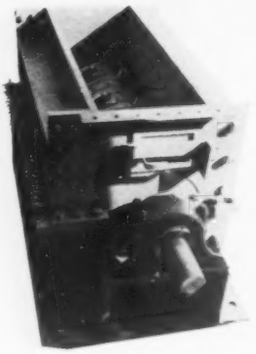
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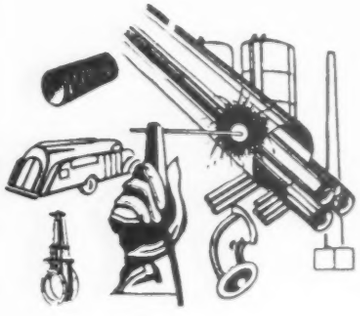
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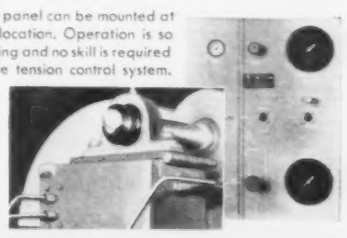
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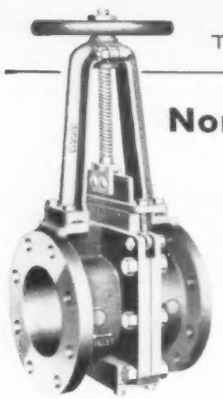
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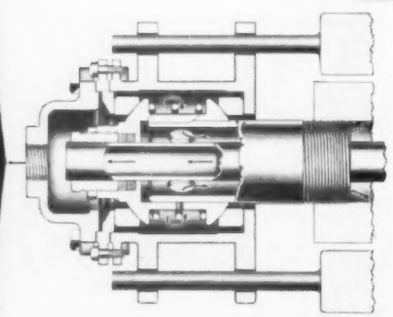
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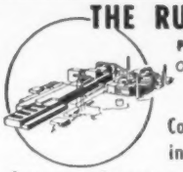
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The Last Word — PULP & PAPER — Editors' Page

They "Battled" to Get to Paper Week

Paper Week 1958 and that coincident freak snowstorm which blanketed the country from Maine to Florida—the heaviest in recorded history in some areas—won't be forgotten for a long time. Many hundreds of delegates virtually had to battle their way into Manhattan.

Paper Week is a special sort of experience for the 2,500 who attend. It has been described a thousand times, perhaps, as a pulp and paper Mecca, where delegates go to cleanse their sins or at least seek refreshment. Some may say a better description of Paper Week would be to call it a Golgotha—a place of torment and martyrdom.

Delegates this year arrived many hours late on trains. Several scheduled speeches had to be cancelled. One group, coming just from Washington, D.C., was held up seven hours. A company plane from Virginia landed to refuel in Baltimore. The group discovered there was no fuel. They decided to take off anyway with just enough gas for New York and one pass over the field. They got clearance and made it.

Maybe this is the kind of determination that makes Paper Week and this great industry what it is. More anxiously than ever before, delegates came to learn what the outlook is, what is new, where the industry is going. On many pages of this issue, PULP & PAPER presents what its editors skimmed off as the cream of the meetings, for quick, useful reading.

Headlines Gave Wrong Picture

It seemed unfortunate that in the first headline of the week, the New York *Times* reported the pulp and paper industry was meeting in an atmosphere of gloom. Their reporter didn't go to the same cocktail parties we went to. Sure, the cocktails helped, but there was still very little gloom the next morning.

We met presidents of Wisconsin and Michigan paper mills who said they were running some Sundays (that usually is a prerogative of pulp mills). Many northern mills, especially, were doing all right at six days a week. And the five day mill men were not especially downcast. Granted, the picture is spotty, and in some grades and some areas, the mills were really low-balling. But the industry was running better than some other big ones. Speaking like the purchasing agent he is, one starred Paper Week speaker advocated price cutting and, of course, he captured more headlines in New York. It was, most certainly, the wrong kind of publicity for the APPA program. Industry leaders were quick to disagree emphatically, in many interviews with PULP & PAPER editors. As this issue went to press, the industry generally is still holding the line in prices. It knows that cutting them won't sell any more pulp, paper or paperboard.

The way George Omsted Jr., describes the situation is the prize comment of Paper Week for our money:

"When you have been eating cake for a year, it is tough to get back to bread and butter."

Test of Industry's Statesmanship

By any other standards of comparison than with 1956, 1957 was a great year. But, as the man says, all things are relative.

For instance, although production was a second all-time high, the industry was not exuberant about it. Why? Because its capacity to produce pulp, paper and paperboard had risen substantially since 1954.

U. S. woodpulp production in 1957 dipped a mere 1% to 21,807,693 tons from 1956. Consumption was down about 2% to 22,540,735 tons.

In 1957 the paper industry operated at about 91% of capacity to produce 13,594,968 tons vs. an operating rate of 98% in 1956 when it racked up 13,976,381 tons. Production-wise this looks good, but since 1956 when the industry capacity was around 15,034,000 tons (according to the Writing Paper Mfrs. Assn.), the industry has added a million tons capacity and by the end of 1958 will have close to 17 million tons capacity.

Paperboard operated at about 90% capacity in 1957 (compared to 94% in 1956) and produced 14,080,721 tons. This was about 1% less than 1956 production of 14,234,171 tons. But since 1956 when its capacity was around 16,868,000 tons, paperboard has added 700,000 tons in 1957 to bring its capacity to 17,565,000 tons and by year's end is expected to have a capacity of 18,647,000 tons.

A booming United States economy had prodded the industry to enter into a phase of expansion. But paper mills are not conceived and put into production in a year or even two. And before the industry knew it, it had a bad case of expansionitis. Or perhaps it was a bad case of ill-timing. At any rate, as the boom sags, it finds that for the time being the industry's capacity to produce pulp, paper and paperboard is just a little bit more than demand. Now the industry faces a test in statesmanship—to weather this interim without getting hurt.

It's Still True

"Uncle Jake" Kindleberger, the late founder of KVP Co. wrote this in 1938. It is good reading in 1958:

"I am indeed sorry that I cannot accurately tell you what lies before us in 1938. There is just one thing that I am certain about, and all the king's horses and all the king's men cannot budge me from this conviction, namely, that 1938 holds no nightmares for the man who will faithfully adhere to the rules for making life a success, for this year or for the years to come.

"Firstly, don't be afraid to face the new year. Set your face firmly toward your goal, look neither to the right nor to the left, but keep going on with the determination of a St. Paul and saying as you go, 'I will conquer or bust!'

"Keep within you, every moment of your life, the faith of an Abraham. Have within you the courage of a Joshua. Let your constant companion be the firm purpose of a Daniel, the perseverance of a Nehemiah who won in spite of an army of arch-enemies.

"Be deaf, dumb, and blind to all obstacles in your pathway. You have but one thing to do—win the race. Never for a second weaken in your faith in yourself or in your company. Keep your enthusiasm at white heat.

"Both God and man will be on your side if you work while the dew is still sparkling, if you work through the glowing sun, if you work till the last beam fadeth.

"Do this intelligently and lovingly and the year 1938 will crown you and reward you as a master man.

"With this kit of tools by your side and knowing how to use these tools, I'll bet my last dollar that you will win."



THEY *get to take a last look inside*

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Having such a unit might permit you to shorten an assembly line or reorganize assembly operations for greater convenience, speed, economy. The research men at Standard who developed this inspection method will be glad to share their know-how with you to help you fit it to your assembly operations.

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